SAMSUNG DVD-R3000

MODEL

OPERATING MANUAL

Contents

Contents **2**
Dear Customer **3**
Checking the Accessories **3**
Warning and Important Information **4**
Control reference guide **5**
Main unit 5
Remote control 6
Batteries A 6
Use B 6
The unit's display 7
Discs **8**
Discs you can use 8
Discs you can use for recording and play 8
Play-only discs 8
Discs that cannot be played 9
Audio format logos 9
Types of disc for the type of connected TV 9
Setting the remote control to operate your TV **10**
Television operation 10
Operating other Panasonic DVD equipment with the remote control 10
Connections (with Scart leads) **11**
Connections (with S-Video cable) **12**
Auto Setup (with Q Link Functions) **13**
To Setup this DVD Recorder with a brand-new Q Link TV 13
To Set Up this VCR with an existing Q Link TV 14
Auto Setup (without Q Link Functions) **14**
Video Plus+ Codes for Satellite Receivers/Cable TV **15**
Selecting TV screen type **16**
Playing discs **17**
Starting play from where you stopped it (Resume Function) 18
Fast forward and rewind—SEARCH 19
Slow-motion play 19
Frame-by-frame viewing 19
Skipping 20
Starting play from a selected programme, title, chapter or track 20
Manual Skip 21
Selecting an amount of time to skip—Time Slip 21
Changing audio 22
Programme play 23
Random play 24
Recording television programmes **25**
Playing while you are recording **28**
Playing from the beginning of the programme you are recording—Follow-on play A 28
Simultaneous recording and play B 28
Checking the recording during recording (TIME SLIP) A 29
Watching the television while recording 29
Using the top window **30**
About the top window 30
Using the top window 30
Timer recording **32**
Manual programming 35
To check programmes 37
Starting and canceling programmes 37
Recording from a video cassette player **38**
Entering titles **40**
DISC INFORMATION **41**
Enter Title 41
Disc Protection 42
Releasing disc protection 43
Format 44
Finalize—Creating DVD-Video 45
Using the direct navigator **46**
Selecting programmes to play 46
Erasing programmes 48
Entering and editing programme titles 49
Checking programme contents 50
Protecting programmes 51
Releasing programme protection 52
Erasing parts of a programme 53
Using play lists to edit programmes **55**
Displaying play lists 55
Creating play lists 56
Playing play lists 57
Playing play list scenes 58
Adding scenes to a play list 58
Moving a scene 59
To re-edit a play list scene 60
Erasing a scene from a play list 60
Copying play lists 61
Erasing a play list 62
Titling play lists 63
Checking play list's contents 63
Using on-screen menu icons **64**
Common procedures 64
Icons for disc information 65
Icons for unit information 66
Repeat play A 67
A-B repeat play B 67
Enjoying virtual surround sound effects (V.S.S.) C 67
Marking places to play again—MARKER 68
Auto recording from Digital Video (DV) equipment **69**
Child Lock **70**
To activate the child lock 70
To cancel the child lock 70
Upgrading your system **70**
Enjoying more powerful sound 70
Connecting a digital amplifier or system component A 71
Connecting an analogue amplifier or system component B 71
Connecting a Decoder C 72
Connecting a satellite receiver or digital receiver D 72
Connecting a video cassette recorder E 73
Changing the unit's settings **74**
Common procedures 74
Summary of settings 75
Entering a password 78
Digital output 78
Off Timer Setting 79
Remote Setting 80
Clock Settings 81
Channel Settings 83
Re-initialize Setting 85
On-screen displays **86**
Changing the information displayed 86
Display examples 86
Maintenance and Handling **87**
Maintenance 87
Disc handling 87
Glossary **87**
Self-diagnosis **89**
Error displays **90**
Troubleshooting guide **91**
Specifications **94**
Index **95**

Dear Customer

May we take this opportunity to thank you for purchasing this Panasonic DVD Video Recorder.
We would particularly advise that you carefully study the Operating Instructions before attempting to operate the unit and that you note the listed precautions.

For the United Kingdom

Caution for AC Mains Lead

For your safety please read the following text carefully

This appliance is supplied with a moulded three-pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-amperes and it is approved by ASTA or BSI to BS 1362.
Check for the ASTA mark ⓐ or the BSI mark ⓑ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY. THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt, please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue; Neutral, Brown; Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol ⏚.

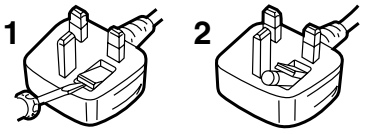
How to replace the Fuse

- There are two types of the AC mains lead assembly: Ⓐ and Ⓑ as shown.

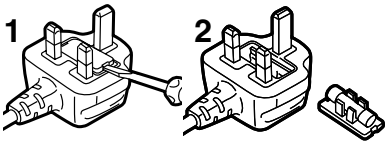
1 Open the fuse compartment with a screwdriver.

2 Replace the fuse and fuse cover.

TYPEⒶ

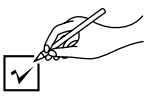


TYPEⒷ



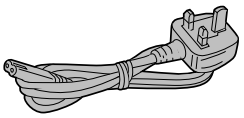
Checking the Accessories

Check that you have the accessories shown



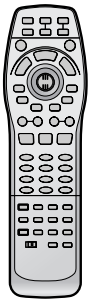
Tick off as you unpack the accessories.

☐ **AC Mains lead**
RJA0053-3X

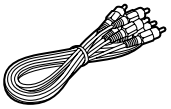


☐ **RF lead to connect VCR and TV**
K2KF2BA00001
or
K1TWACC00001

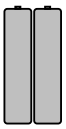
☐ **Remote Control**
N2QAKB000011



☐ **Audio Video Cable**
K2KA6CA00001



☐ **Batteries for the Remote Control**
R6 size



☐ **Guarantee Card**

Shop @ Panasonic **(For UK Customers Only)**

- Order accessory and consumable items for all Audio Visual Products with ease and confidence either by telephoning our Customer Care Centre on **08705 357357 Mon-Fri 9:00am-5:30pm**
- Or go on line through our Internet Accessory ordering application at **www.panasonic.co.uk**.
- Most major credit and debit cards accepted.
- All enquires transactions and distribution facilities are provided directly by Panasonic UK Ltd.
- It couldn't be simpler!

Warning and Important Information

CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

WARNING:
TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR PRODUCT DAMAGE, DO NOT EXPOSE THIS APPARATUS TO RAIN, MOISTURE, DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.

As this equipment gets hot during use, operate it in a well ventilated place;
do not install this equipment in a confined space such as a book case or similar unit.

Important
Your attention is drawn to the fact that the recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

Warning
To reduce the risk of fire or shock hazard, do not expose this equipment to rain or moisture.

For your safety
Do not remove outer cover.
Touching internal parts of the unit is dangerous, and may seriously damage it.
To prevent electric shock, do not remove cover. There are no user serviceable parts inside. Refer all servicing to qualified service personnel.
For your safety, be sure not to connect or handle the equipment with wet hands.

Disposal of old equipment
Batteries, packaging and old equipment should not be disposed of as domestic waste, but in accordance with the applicable regulations.

Cautions before you operate this unit
Avoid:
- Humidity and dust.
- Extreme heat such as direct sunlight.
- Magnets or electromagnetic objects.
- Touching internal parts of the unit.
- Water or some other liquid.
- Lightning. (Disconnect the aerial plug from the unit during lightning storms.)
- Anything heavy on the unit.
- Connecting or handling the equipment with wet hands.
- Using a cell phone near the unit because doing so may cause noise to adversely affect the picture and sound.

Do:
- Wipe the unit with a clean and dry cloth.
- Install the unit in a horizontal position.
- Keep the unit, TV and other equipment switched off until you have finished all connections.

VIDEO Plus+ and PlusCode are registered trademarks of Gemstar Development Corporation.
The VIDEO Plus+ system is manufactured under license from Gemstar Development Corporation.

"i.LINK" is the name of the connector in accordance with the IEEE1394-1995.
"i.LINK" is the logo marked on products conforming with the "i.LINK" specifications.
- You cannot control this unit from the digital video equipment even if using the DV cable.

Notes on these instructions
These operating instructions describe operations mainly using the remote control. If the name of the button is the same, the operation described can also be performed with the main unit.
The contents of the screens used in these instructions may not necessarily match what you will see on your screen.

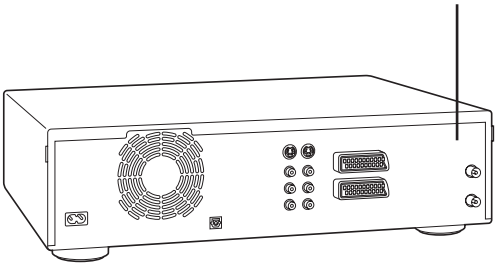
Displays
The displays shown in these instructions are examples only. Actual displays depends on the disc being played.

Manufactured under license from Dolby Laboratories.
"Dolby", "Pro Logic" and the double-D symbol are trademarks of Dolby Laboratories.

"DTS", "DTS Digital Surround" and "DTS Digital Out" are registered trademarks of Digital Theater Systems, Inc.

CLASS 1
LASER PRODUCT

LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT



Inside of unit

Do not disassemble.
Do not service.

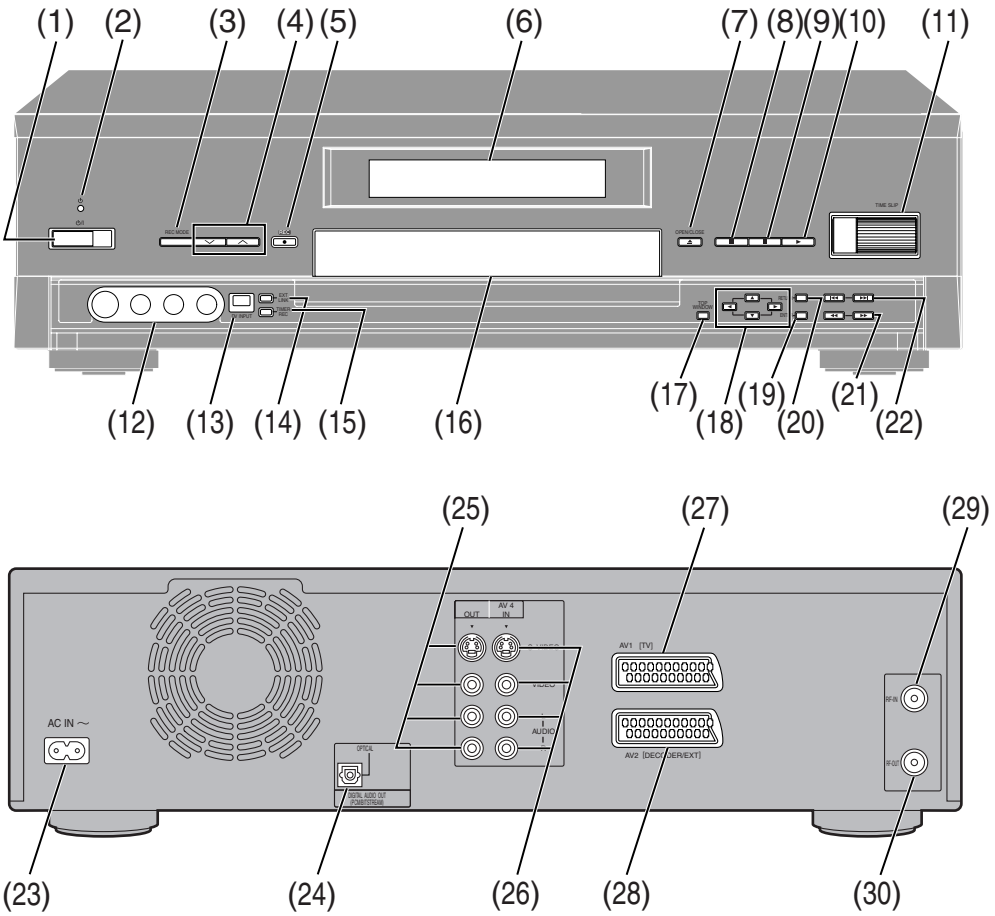
Ne Pas Démonter.
Réservé Au Personnel Autorisé.

Nicht auseinandernehmen.
Keine Reparatur oder
Wartung erlaubt.

分解しないでください。
保守はできません。

VGN9336-1Z

DANGER	VISIBLE OR INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.
ATTENTION	RAYONNEMENT LASER VISIBLE OU INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FASCEAU.
VORSICHT	SICHTBARE ODER UNSICHTBARE LASERSTRAHLUNG,WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
VARNING	SYNLIG ELLER OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. STRÅLEN ÄR FARLIG.
注　意	ここを開くと可視または不可視レーザ光が出ます。ビームを直接見たり、触れたりしないでください。



Main unit

Front **Page**

(1) POWER switch (⏻/I) 14
- To switch the unit from on to standby mode or vice versa. In the standby mode, the unit is still connected to the mains.
- In standby mode, the unit is still consuming a small amount of power.

(2) Standby indicator
- When the unit in connected to the AC power supply cord, this indicator lights up in standby mode and goes out when the unit is turned on.

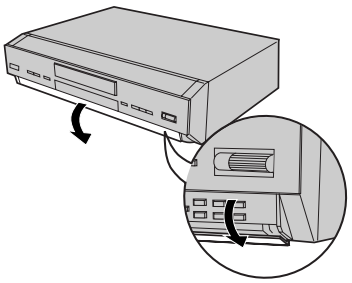
(3) Recording mode button (REC MODE) 25
(4) Channel up/down button (∧, ∨) 25
(5) Recording button (●, REC) 25
(6) Display 7
(7) Disc tray open/close button (⏏, OPEN/CLOSE) 17
(8) Stop button (■) 17
(9) Pause button (❚❚) 17
(10) Play button (►) 17
(11) Time slip button and roller (TIME SLIP) 29
(12) AV3 input sockets 73
(13) DV input terminal (DV INPUT) 69
(14) External link button (EXT LINK) 27
(15) Timer recording button (◷, TIMER REC) 33
(16) Disc tray 17
(17) Top window button (TOP WINDOW) 30
(18) Cursor buttons (▲, ▼, ◄, ►) 18
(19) Enter button (ENTER) 18
(20) Return button (RETURN) 18
(21) Slow/Search buttons (SLOW/SEARCH, ◄◄, ►►) 19
(22) Skip buttons (SKIP, I◄◄, ►►I) 20

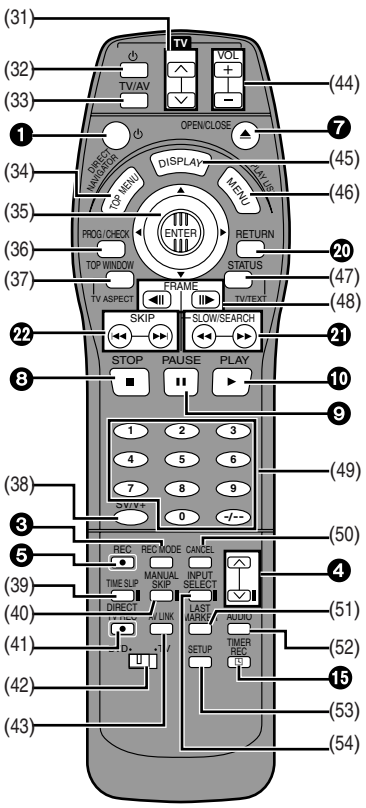
Rear **Page**

(23) AC input socket 11
(24) Digital audio output socket 71
(25) S-video/video/audio output socket(s) 12
(26) AV4 input sockets 73
(27) AV1 (TV) socket 11
(28) AV2 (DECORDER/EXT) socket 72
(29) RF input socket 11
(30) RF output socket 11

■Opening the front panel

Open the front panel to access other controls and input terminals.

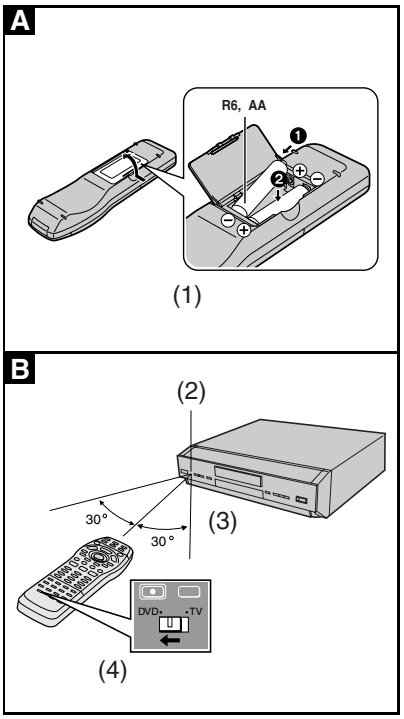




Remote control

	Page
(31)TV channel buttons (TV, ∧, ∨)	**10**
(32)TV power on/off button (TV, ⏻)	**10**
(33)Television input mode selector (TV, TV/AV)	**10**
(34)Top menu and Direct Navigator button (TOP MENU, DIRECT NAVIGATOR)	**18, 46**
(35)Joystick (▲, ▼, ◄, ►)/Enter button (ENTER)	**18**
(36)Manual programming and check button (PROG/CHECK)	**35**
(37)Top window and TV aspect button (TOP WINDOW, TV ASPECT)	**23**
(38)Video Plus+ button (SV/V+)	**32**
(39)Time slip button (TIME SLIP)	**29**
(40)Manual skip button (MANUAL SKIP)	**21**
(41)Direct TV recording button (●, DIRECT TV REC)	**27**
(42)DVD/TV switch (DVD, TV)	**16**
(43)This button does not operate on this unit	
(44)TV volume up/down buttons (TV VOL, +, −)	**10**
(45)Display button (DISPLAY)	**64**
(46)Menu and Play List button (MENU, PLAY LIST)	**18, 55**
(47)On-screen menu display and TV/TEXT button (STATUS, TV/TEXT)	**86**
(48)Frame advance and frame reverse buttons (FRAME)	**19**
(49)Numeric buttons (0–9, – /– –)	**18**
●When selecting a title, chapter, track, programme, or play list Example: “5”: [0] →[5] Example: “15”: [1] →[5]	
●When selecting a page of play list scene Example: “5”: [0] →[0] →[5] Example: “15”: [0] →[1] →[5]	
●When selecting a television channel Example: “5”: [5] Example: “15”: [-/--] →[1] →[5]	
(50)Cancel button (CANCEL)	**23**
(51)Last marker button (LAST MARKER)	**18**
(52)Audio button (AUDIO)	**22**
(53)Set up button (SET UP)	**16**
(54)Input select button (INPUT SELECT)	**38**

Buttons such as ❶ function the same as the controls on the unit.



(1) Push in and down on the (−) end.
(2) Remote control signal sensor
(3) 7 m
(4) Switch [TV/DVD] to “DVD”.

Batteries A

- Insert so the poles (+ and −) match those in the remote control.
- Do not use rechargeable type batteries.

Do not;

- mix old and new batteries.
- use different types at the same time.
- heat or expose to flame.
- take apart or short circuit.
- attempt to recharge alkaline or manganese batteries.
- use batteries if the covering has been peeled off.

Mishandling of batteries can cause electrolyte leakage which can damage items the fluid contacts and may cause a fire.
If electrolyte leaks from the batteries, consult your dealer.
Wash thoroughly with water if electrolyte comes in contact with any part of your body.

Remove if the remote control is not going to be used for a long period of time. Store in a cool, dark place.
Replace if the unit does not respond to the remote control even when held close to the front panel.

Use B

Aim at the sensor, avoiding obstacles, at a maximum range of 7 m directly in front of the unit.

- Keep the transmission window and the unit’s sensor free from dust.
- Operation can be affected by strong light sources, such as direct sunlight, and the glass doors on cabinets.

Do not;

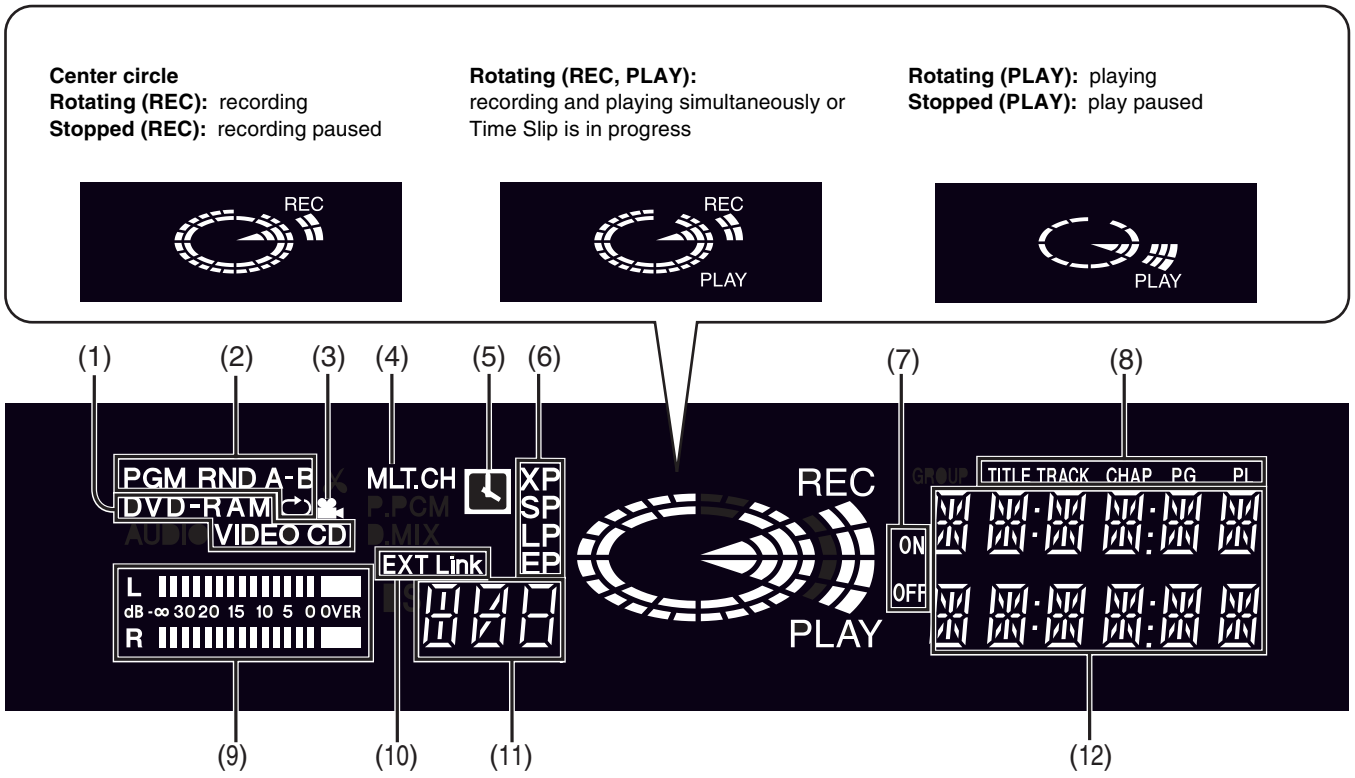
- put heavy objects on the remote control.
- take the remote control apart.
- spill liquids onto the remote control.

The unit's display

Center circle
Rotating (REC): recording
Stopped (REC): recording paused

Rotating (REC, PLAY):
recording and playing simultaneously or Time Slip is in progress

Rotating (PLAY): playing
Stopped (PLAY): play paused



(1) Disc type
DVD-RAM: DVD-RAM
DVD-R: DVD-R
DVD VIDEO: DVD-Video
VIDEO CD: Video CD
CD: Audio CD

(2) Play mode
PGM: programme play
RND: random play
A-B ⟲: A-B repeat play
⟲: repeat play
PGM ⟲: programme repeat play

(3) Multi-angle (page 65)

(4) Audio signal type
MLT.CH: a signal with 3 or more channels

(5) Timer programme display
On:
when a programme for timer recording is on (pagse 33 and 36)
Flashes:
when there are less than 10 minutes to go before timer recording is programmed, but the unit is not on standby.

(6) Recording mode (pages 26 and 33)
XP: High-quality mode
SP: Normal mode
LP: Long play mode (4 hours)
EP: Long play mode (6 hours)
XP SP LP EP (all on)**:**
FR (flexible recording) mode (only with timer recording)

(7) Timer indicator
ON: the start time for a timer recording
OFF:
the end time for a timer recording or the time left until recording stops

(8) The display mode of the main display section
TITLE: title number
TRACK: track number
CHAP: chapter number
PG: programme number
PL: play list number

(9) Volume level meter

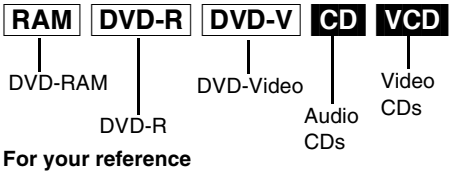
(10)EXT Link
On:
when EXT LINK function is on (page 27)

(11)Channel
1, 2, 3, ..., 99 / AV1,AV2, AV3, AV4 / DV

(12)Main display section
Timer recording
Recording and play counter
Remaining disc time
Current time
Title, track, chapter, direct navigator and play list page numbers
Miscellaneous messages
etc.

Discs you can use

The features you can use with the different types of discs are indicated as follows.



For your reference

- DVD-R indicates DVD-R that have not yet been finalized (page 45) and can still be recorded on.
- DVD-R that have been finalized can use the same features as DVD-Video. (Refer to features indicated DVD-V.)

Discs you can use for recording and play

Logos for the discs you can record on and play

Disc type	Logo	Regulation	Indication used in instructions
DVD-RAM	DVD RAM RAM4.7	[4.7 GB / 9.4 GB, 5″ (12 cm)] [2.8 GB 3″ (8 cm)]	RAM
DVD-R	DVD R R4.7	4.7 GB for General Ver.2.0	DVD-R

The manufacturer accepts no responsibility and offers no compensation for loss of recorded or edited material due to a problem with the unit or disc, and accepts no responsibility and offers no compensation for any subsequent damage caused by such loss.

Examples of causes of such losses are

(1) A disc recorded and edited with this unit is played in a DVD recorder or computer disc drive manufactured by another company.
(2) A disc used as described in (1) and then played again in this unit.
(3) A disc recorded and edited with a DVD recorder or computer disc drive manufactured by another company is played in this unit.

Note

- Do not allow the disc to become dirty or scratched. Fingerprints, dirt, dust, and scratches on the recording surface may make it impossible to use the disc for recording.
- If you use DVD-RAM cartridges, you can protect your recordings with the write protected tab (page 90). With the tab in this position, you cannot record to the disc, delete programmes with the direct navigator,edit with the play list screen, or format the disc.
- This unit is compatible with both non-cartridge and cartridge DVD-RAM, but cartridge-type discs give better protection to your valuable recordings.

For your reference

- **DVD-RAM recorded on this unit cannot be played on incompatible players (including players manufactured by Panasonic).**
- Using a Panasonic DVD-RAM, you can record broadcasts that allow you to make one copy, such as some satellite broadcasts.
- This unit cannot record PAL signals to discs containing NTSC signals or vice versa.
- This unit cannot record to discs containing both PAL and NTSC signals. Play of discs recorded with both PAL and NTSC on another unit is not guaranteed.

Play-only discs

Discs you can play-only and their logos

Disc type	Logo	Video system	Indication used in instructions
DVD-Video	DVD VIDEO DVD VIDEO	PAL / NTSC	DVD-V
Audio CD	COMPACT disc DIGITAL AUDIO	–	CD
Video CD	COMPACT disc DIGITAL VIDEO	PAL / NTSC	VCD

Region Management Information (DVD-Video only)

Region number are allocated to DVD players and software according to where they are sold.

- **For the United Kingdom : “2”**
- **For Hong Kong Special Administrative Region of China : “3”**

DVD-Video can be played on this unit if their region number is the same or includes the same number, or if the DVD is marked “ALL”. Confirm the region number for this unit before choosing discs. The number for this unit is indicated on the rear panel of the unit.

Playing CD-R and CD-RW

This unit can play CD-DA (digital audio) and Video CD format audio CD-R and CD-RW that have been finalized upon completion of recording.

It may not be able to play some CD-R or CD-RW due to the condition of the recording.

Note

- The producer of the material can control how these discs are played. This means that you may not be able to control play of a disc with some operations described in these operating instructions. Read the disc’s instructions carefully.

Discs that cannot be played

- DVD-Video with a region number other than the number for this unit or “All”
- Some DVD-R
- DVD-RAM (2.6 GB/5.2 GB)
- DVD-ROM
- DVD-RW
- DVD-Audio
- +RW
- CD-ROM
- CDV
- CD-G
- CVD
- SVCD
- SACD
- MV-Disc
- PD
- Photo CD
- Divx Video Disc, etc.Discs
- Play of non-standard Video CDs and Super Video CDs is not guaranteed.

DVD-R

You can play DVD-R on compatible DVD players by finalizing [the process that allows recordings on DVD-R to be played on compatible DVD players, (page 45)] them on this unit, effectively making them into DVD-Video.

■Before finalizing

You can record onto the available space on the disc and perform editing functions, such as giving titles to discs and programs and erasing programmes.
You cannot record to or edit DVD-R with this unit if it was recorded with another unit, whether it is finalized or not.
You cannot record over parts that have been recorded.
Erasing programmes will not increase the discís available time.

■After finalizing

The video and audio is recorded according to the DVD-Video specifications, and your very own DVD-Video is created.

- The titles you entered with this unit appear as menus.
- Programmes longer than 5 minutes are divided into five-minute chapters.
- These DVD-R can no longer be recorded on or edited.
- These DVD-R can be played on other DVD players, but this is not guaranteed.
  Play may not be possible due to the player you are using, the DVD-R, or the condition of the recording. Use this unit to play the disc if the player is unable.

Visit Panasonic’s homepage for more information about DVDs.
http://www.matsushita-europe.com/ (For the United Kingdom)

For your reference

- It takes about 30 seconds for the unit to complete recording management information after recording finishes.
- To record on DVD-R, this unit optimizes the disc for each recording. Optimizing is carried out when you start recording after inserting the disc or turning the unit on. Recording may become impossible after the disc is optimized more than 50 times.
- The first 30 seconds of a programme may not be recorded if you make successive timer recordings.
- The video is recorded in a 4:3 aspect irrespective of the video signal input. Use the television’s screen modes to change the screen size for play.
- Some broadcasts carry signals that allow you to make one copy, but you cannot record these broadcast with DVD-R. Use DVD-RAM to record these kinds of broadcast.
- Play may be impossible in some cases due the condition of the recording.
- We recommend using DVD-R manufactured by Panasonic as they have been tested to be compatible with this unit.
- You cannot change audio type if a DVD-R is in the unit. Select the audio type (M1 or M2) before recording by going to “Bilingual Selection for DVD-R” in the “Sound” menu.

For details about the kind of audio recorded when using DVD-R and recording from DV equipment, see page 39.

Audio format logos

Dolby Digital (pages 70 and 87)
This unit can play Dolby Digital in stereo (2 channels). Connect an amplifier with a built-in Dolby Digital decoder to enjoy surround sound.

DTS Digital Surround (pages 70 and 87)
Connect this unit to equipment that has a DTS decoder to enjoy DVDs with this mark.

Types of disc for the type of connected TV

When you use the discs recorded either PAL or NTSC, refer to this table.

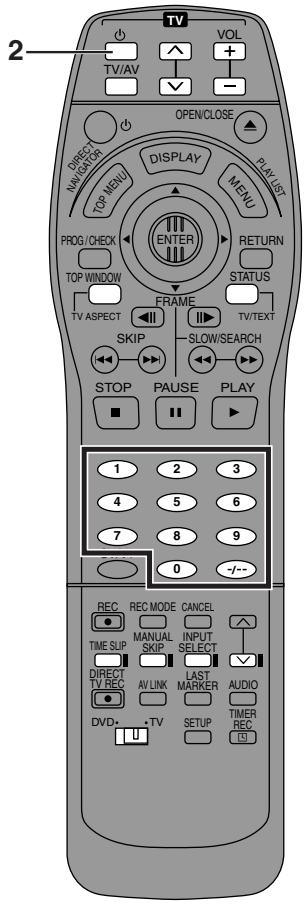
TV type	Disc	Yes/No
Multi-system TV	PAL	Yes
	NTSC	Yes
NTSC TV	PAL	No
	NTSC	Yes*1
PAL TV	PAL	Yes
	NTSC	Yes*2

*1 If you select “NTSC” in “NTSC Signal Output” (page 77), the picture may be clearer.
*2 If you select “PAL 60” in “NTSC Signal Output” (page 77), the picture may be clearer.
If your television is not equipped to handle PAL 525/60 signals the picture will not be shown correctly.

Discs and accessories

- **DVD-RAM**
  You can also record signals which allow you to make one copy, onto these discs.
  9.4-GB, double-sided, type 4 cartridge:
  LM-AD240E
  4.7-GB, single-sided, type 2 cartridge:
  LM-AB120E
  (set of 3, LM-AB120E3)
  4.7-GB, single-sided, non-cartridge:
  LM-AF120E
  (set of 3, LM-AF120Q3)
  (For Hong Kong Special Administrative Region of China)
- **DVD-R**
  4.7-GB, single-sided, non-cartridge:
  LM-RF120E
- **DVD-RAM/PD Disc cleaner:**
  FLF-K200DCA1
- **DVD-RAM/PD Lens cleaner:**
  FLF-K123LCA1

Setting the remote control to operate your TV



Television operation

You can control televisions by changing the remote control code.

Preparation

- Turn on the television.
- Switch [DVD, TV] to "TV".

1 Refer to the chart below for the code for your television.

2 Press and hold [TV, ⏻] and enter the two-digit code with the numeric buttons.

- For example: 01, press [0]→[1].
- After entering the code, test the remote control by turning on the television and changing channels.

Note

- If there is more than one code, repeat the procedure until you find the code that allows correct operation.
- Repeat this procedure after you change the batteries.
- If your television brand is not listed or if the code listed for your television does not allow control of your television, this remote is not compatible with your television.

List of TVs Compatible with the unit's Remote Control

Brand:	Code	Brand:	Code
Panasonic	01, 02, 03, 04	NOKIA	25, 26, 27
AIWA	35	NORDMENDE	10
AKAI	27, 30	ORION	37
BLAUPUNKT	09	PHILIPS	05, 06
BRANDT	10, 15	PHONOLA	31, 33
BUSH	05, 06	PIONEER	38
CURTIS	31	PYE	05, 06
DESMET	05, 31, 33	RADIOLA	05, 06
DUAL	05, 06	SABA	10
ELEMIS	31	SALORA	26
FERGUSON	10	SAMSUNG	31, 32
GOLDSTAR/LG	31	SANSUI	05, 31, 33
GOODMANS	05, 06, 31	SANYO	21
GRUNDIG	09	SBR	06
HITACHI	22, 23, 31, 40, 41, 42	SCHNEIDER	05, 06, 29, 30, 31
INNO HIT	34	SELECO	06, 25
IRRADIO	30	SHARP	18
ITT	25	SIEMENS	09
JVC	17, 39	SINUDYNE	05, 06, 33
LOEWE	07	SONY	08
METZ	28, 31	TELEFUNKEN	10, 11, 12, 13, 14
MITSUBISHI	06, 19, 20	THOMSON	10, 15
MIVAR	24	TOSHIBA	16
NEC	36	WHITE WESTINGHOUSE	05, 06

Operation:	Button	Operation:	Button
On and off:	[TV, ⏻]	Numeric:	[0-9, -/--]
Video input mode:	[TV, TV/AV]	TV aspect:	[TV ASPECT]
Channels:	[TV, ∧, ∨]	TV/Teletext mode:	[TV/TEXT]
Volume:	[TV, VOL, +, −]	Teletext:	Colour buttons

Operation

These operating instructions describe operations mainly using the remote control. If the name of the button is the same, the operation described can also be performed with the main unit.

The displays shown in these instructions are examples only. Actual displays depends on the disc being played.

Operating other Panasonic DVD equipment with the remote control

By changing the remote control code, you can operate other DVD recorders and players manufactured by Panasonic.
Most of the DVD recorders and players manufactured by Panasonic use the same system for their remote controls, so if you operate them in the same place, the controls can be confused by the different pieces of equipment. Use the following procedure to change the remote control code to solve this problem.

- Use "1", the factory set code, under normal circumstances.

Preparation

Switch [DVD, TV] to "DVD".

Press [⏻] and the numeric buttons corresponding to the code you want to set, [1], [2], or [3], at the same time.

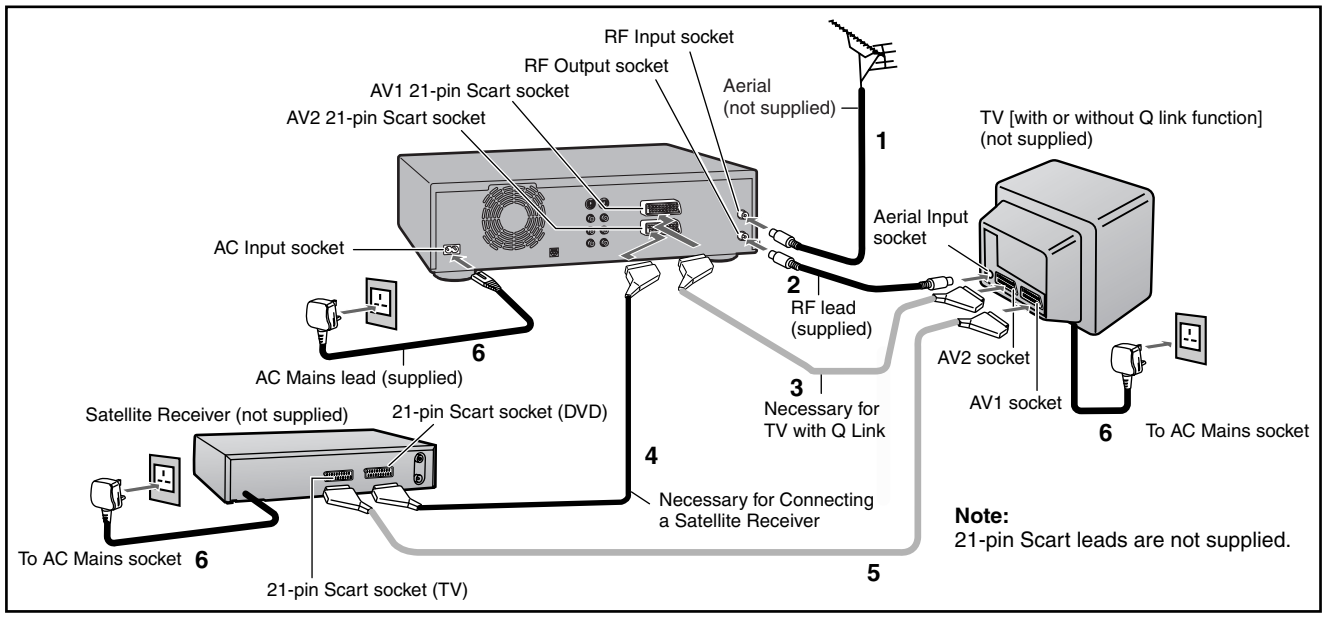
Note

- Be sure to set the same remote control code on the main unit as you did for the remote control itself (page 80, Settings—Remote).
- The display on the right appears on the unit's display if its code and the remote control's code are different. Change the remote control's code to suit the unit.
- The display disappears after about 5 seconds.

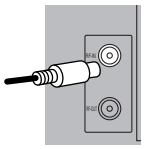
The unit's remote control code

Connections (with Scart leads)

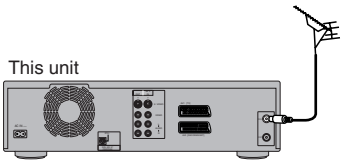
Follow the step-by-step guide below.



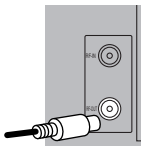
1



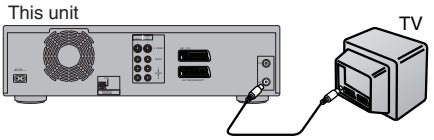
Connect the aerial to the RF Input socket of the DVD Recorder.



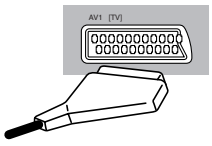
2



Connect the RF lead from the RF Output socket of the DVD Recorder to the TV aerial input socket.

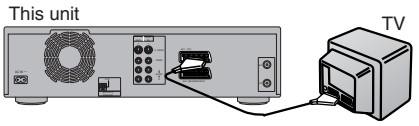


3

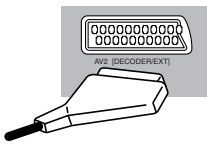


Connect the AV1 21-pin scart socket to TV scart socket (optional).

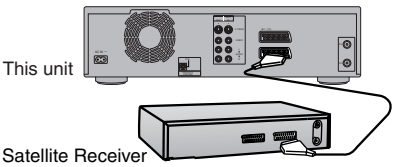
- This is necessary for Download from TV with Q Link function.



4

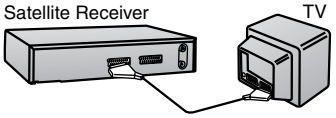


Connect the AV2 21-pin scart socket to the DVD Recorder Scart Socket on your Satellite Receiver/Digital Sat receiver.
If you are not connecting a Satellite Receiver, skip this step.



5

Connect the TV scart socket of your Satellite Receiver to the AV2 scart socket of your TV.
If you are not connecting a Satellite Receiver, skip this step.



6

Plug the TV, DVD Recorder and Satellite Receiver into the mains as shown at top of the page.

Hints:

- For the United Kingdom:
  Q Link offers a range of convenient functions. For example, downloading of the tuning positions of all available television stations into your unit's memory if you connect the unit to your television with a fully wired 21-pin Scart cable (not supplied). Features similar to Q Link have different names and may not work the same.
  *1 [Q Link] is a registered trademark of Panasonic.
  *2 [DATA LOGIC] is a registered trademark of Metz.
  *3 [Easy Link] is a registered trademark of Philips.
  *4 [Megalogic] is a registered trademark of Grundig.
  *5 [SMARTLINK] is a registered trademark of Sony.
  For details, refer to your television's operating instructions or consult your dealer.
- Unlike in most commercially available 21-pin Scart cables, all 21 pins of one plug on a fully wired 21-pin Scart cable are connected to the matching pins on the other end of the cable.

Reference:

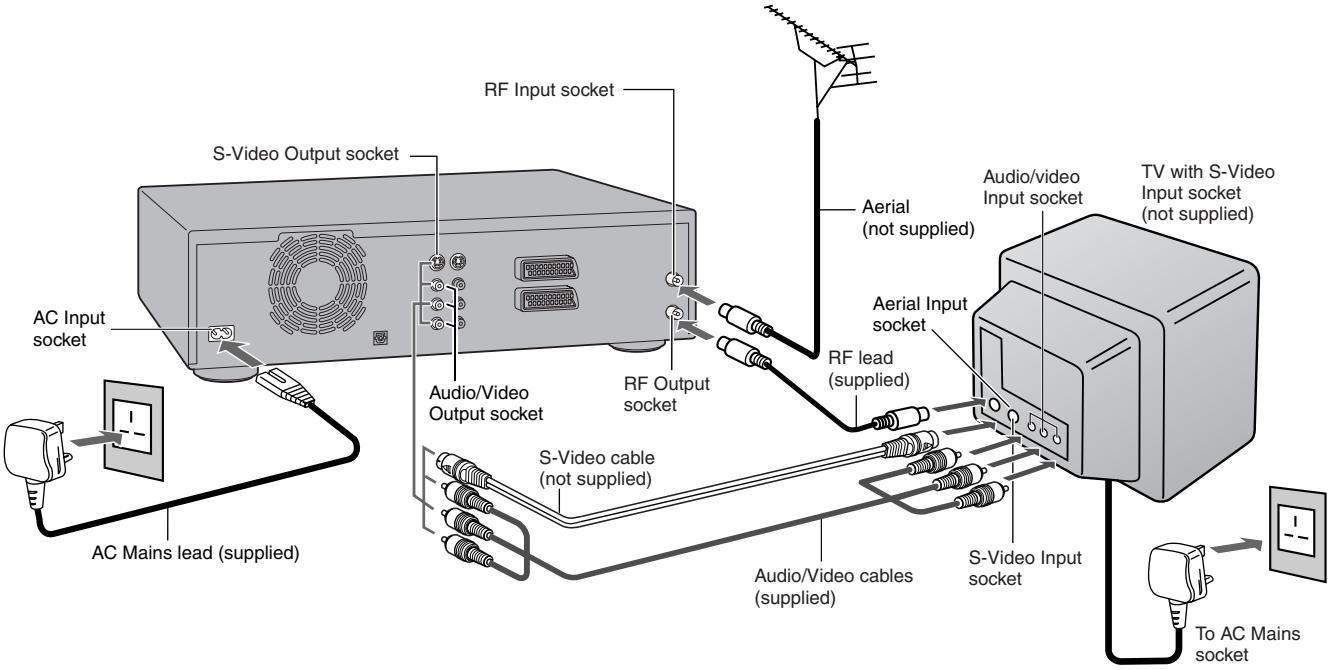
- If the TV set is equipped with a 21-pin scart socket that features Y/C signal separation, set the "AV1 Output" to "S-Video" (see page 77) so that you can play back with high picture quality and use a fully-wired 21-pin Scart lead (not supplied) to connect the DVD Recorder to the TV.

Connections (with S-Video cable)

Connections and preparations for a TV with S-Video socket.

The conventional video sockets of DVD Recorder's output (input) a combination of the luminance signal (Y) and colour signal (C) which are recorded on the disc. The S (Separate)-Video socket allows separate transmission of signals in order to obtain clearer pictures.

The connection with S-Video Cable can also be used for playback of any disc. The "S" in the "S-Video socket" stands for "SEPARATED Y/C" not for "S-VHS".



After completing the above connections, proceed to the Auto Setup page (Page 14).

Note:
The pictures output by this DVD Recorder can only be viewed when connected to a TV by either the Scart lead or S-Video socket method.

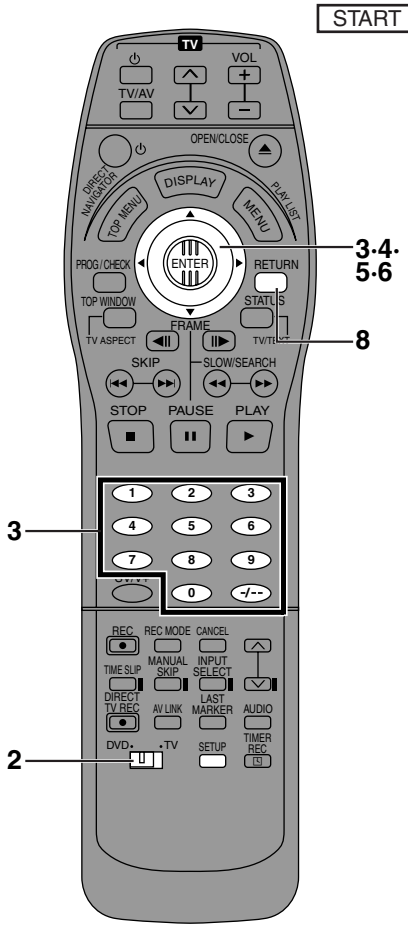
Auto Setup (with Q Link Functions)

For the United Kingdom:
If you do not have a Q Link TV, ignore this page and go to page 14.
The Preset Download function can automatcally copy the tuning position of all available TV station into the DVD Recorder's memory when you connect the DVD Recorder using a fully-wired 21-pin Scart lead to a equipped with the Q Link function.

To Setup this DVD Recorder with a brand-new Q Link TV

Perform the following operation steps exactly as described to ensure that the Preset Download function works correctly.

- First of all, make sure that the DVD Recorder is switched off.



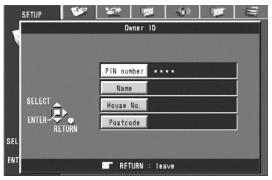
1 Switch the TV on. The TV automatically starts to tune all available TV stations and to adjust the clock. (This is called Auto Setup function.)

- When the TV has finished its own auto setup, the DVD Recorder is automatically switched on, and the downloading of the setup data from the TV to the DVD Recoder starts.

2 Switch [DVD, TV] to "DVD".

3 When Download has finished, the screen for the Owner ID setting menu appears.
Use the joystick [►] and the Numeric buttons to enter a 4-digit PIN number.

- Make sure that you will remember the PIN number (make a note of it).



4 Press [ENTER] and use the joystick [▼]. The cursor moves to "Name".

5 Use the joystick [►].

6 Use the joystick [▲, ▼, ◄, ►] to select a letter and then press [ENTER].
Repeat this to enter the name.

7 Enter "House No." and "Postcode" in the same way.

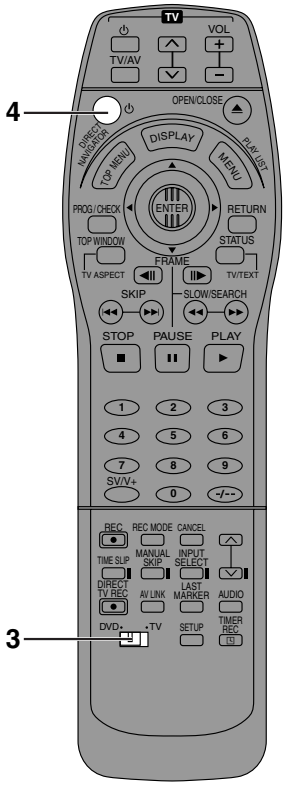
FINISH **8 Press [RETURN] to make the Owner ID setting disappear.**

Reference:

- If you use a Panasonic Q Link TV and perform the operation step 1 above, starting the downloading of the setup data will automatically display the "Download" indication. However, in case of a TV of another make, the "Download" indication may not appear. In this case, select the AV input on your TV if you want to see the "Download" indication.

Hints:

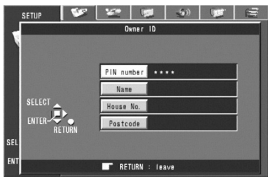
- The explanations in this book refer to Panasonic Q Link TV and DVD Recorder, however they may also apply to other makes of TV and DVD Recorder with similar functions to Q Link. (page 11)
- If you accidentally switch on the DVD Recorder before the TV, downloading of the setup data from the TV may not be performed correctly. In this case, follow the steps below.
  1) Wait until the Auto Setup is complete on both the TV and the DVD Recorder.
  2) Press [SET UP] to display the "Settings" menu on the TV screen.
  3) Use the joystick [▲, ▼, ◄, ►] to select "Tuning" and then "Download".
  4) Press [ENTER] and select "Yes". Downloading of the setup data from the TV to the DVD Recorder starts.
  5) When the programme position and the current time appear in the DVD Recorder display, downloading is complete.



To Set Up this VCR with an existing Q Link TV

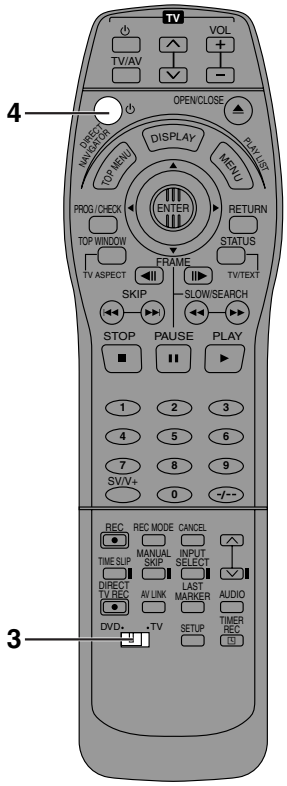
1 Switch the TV on.
2 Select the AV input on your TV.
3 Switch the [DVD, TV] to "DVD".
4 Press [⏻] to switch the DVD Recorder on. Downloading of the setup data starts automatically.

5 To setup the Owner ID, repeat the steps 3-8 on the previous page.



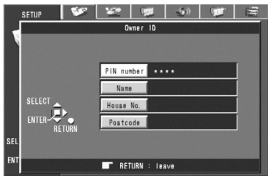
Auto Setup (without Q Link Functions)

Auto Setup automatically tunes all available stations and sets the DVD Recorder's clock to the current date and time.

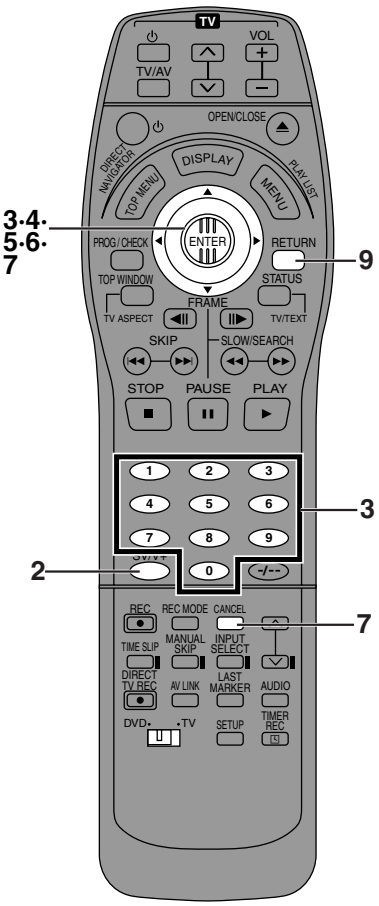


1 Switch the TV on.
2 Select the AV input on your TV.
3 Switch the [DVD, TV] to "DVD".
4 Press [⏻] to switch the DVD Recorder on.
- Auto Setup starts. This takes about 5 minutes.

5 To setup the Owner ID, repeat the steps 3-8 on the previous page.



Video Plus+ Codes for Satellite Receivers/Cable TV



For the United Kingdom:
This unit is not designed to control (switch on or change channel) your satellite receiver or Cable TV box, however, it can be taught to recognise Video Plus+ Codes for Satellite stations. The Satellite receiver or Cable TV box must be switched on and the correct station selected. Some receivers have their own timer facility for this purpose. Please refer to your Satellite Receiver/ Cable TV box instructions for use of such timer facilities.

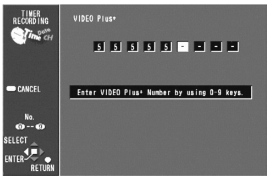
For your unit to recognise the Video Plus+ Codes for each satellite station, you must teach your unit which channel or AV input to record from for the first time. Otherwise when setting a Video Plus+ recording, the [——] symbol will appear in the channel position indicating that the unit does not know which channel position to set. Once you have set the channel/AV input once the unit will remember it whenever you use a Video Plus+ Code for the station again.

Preparation
- Turn on the television.
- Switch [DVD, TV] to "TV".

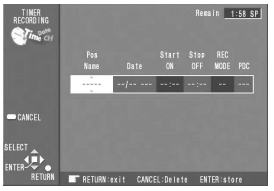
1 Turn on the TV and the unit. Select video playback channel on the TV.

2 Press the SV/V+ button.

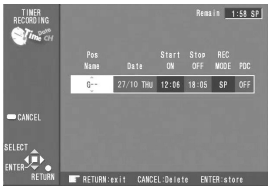
3 Enter a Video Plus+ Code from a Satellite TV Guide for a satellite channel, e.g. Sky 1 using the Numeric buttons. If you make a mistake, use the joystick [◀] to go back.



4 Press [ENTER]. [——] will appear instead of a channel number/AV input.

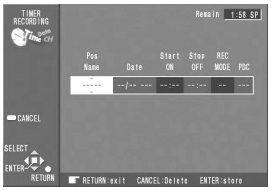


5 Use the joystick [▲, ▼, ◄, ►] to select the channel or AV input that is to be used for recording from the satellite channel.



6 Press [ENTER] to memorise the setting. The unit will now automatically set the programme position or AV input correctly when a Video Plus+ recording is set for this satellite station in the future.

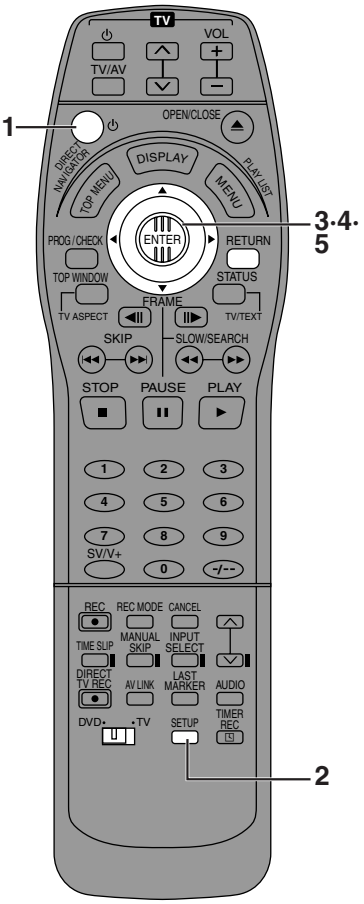
7 Use the joystick [▲] to select the programme that you have just set. Now press [CANCEL] to delete it from the timer recording list. It is no longer needed.



8 Repeat steps 2—7 above until you have set and deleted dummy timer recordings for each of the satellite stations that you will make Video Plus+ recordings from.

9 Press [RETURN] when you have finished.

Selecting TV screen type



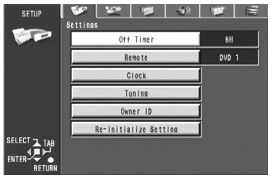
The aspect ratio is factory set to 4:3 for a regular television. You do not have to change this setting if you have a regular 4:3 aspect television.

Preparation

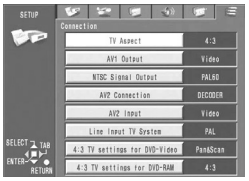
- Turn on the television and select the appropriate video input to suit the connections to this unit.
- Switch [DVD, TV] to "DVD".

1 Press [⏻] to turn this unit on.

2 Press [SET UP] to show the menus.

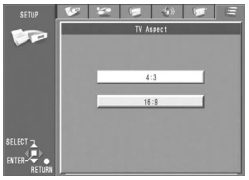


3 Use the joystick [◄, ►] to select the "Connection" tab.



4 Use the joystick [▲, ▼] to select "TV Aspect" and press [ENTER].

5 Use the joystick [▲, ▼] to select the TV aspect and press [ENTER].



- **4:3** (factory setting)
- **16:9**

■To return to the previous screen

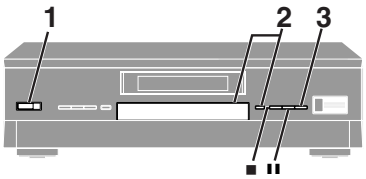
Press [RETURN].

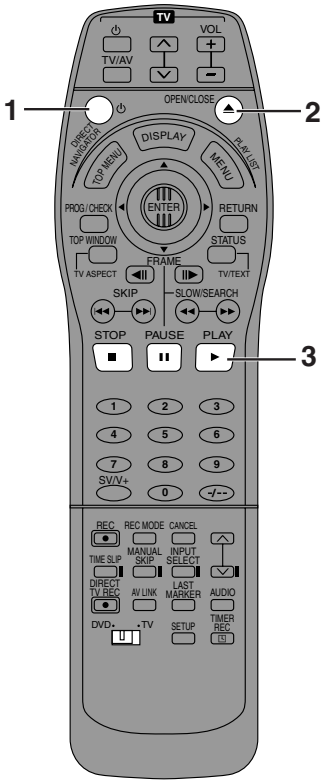
For your reference

Apart from "TV Aspect", other settings also affect how video appears on your television. Check the following if video doesn't appear correctly on your television.

- "Connection"—"4:3 TV Settings for DVD-RAM" or "4:3 TV Settings for DVD-Video" (page 77).
- The video setting on the disc. How video appears is often specified by the disc itself.
- The video settings on your television.

Playing discs





RAM DVD-R DVD-V CD VCD

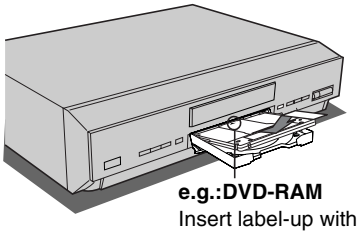
Preparation

Switch [DVD, TV] to “DVD”.

1 Press [⏻] to turn the unit on.

2 Press [⏏, OPEN/CLOSE] to open the tray and insert a disc.

- Insert inside the tray’s guides.
- Insert one disc only.



e.g.:DVD-RAM

Insert label-up with the arrow facing in.

3 Press [▶, PLAY].

- The disc tray closes and play begins.
  (The unit takes some time to read the disc before play starts.)

■To stop play A

Press [■, STOP] (page 18, Starting play from where you stopped it).

- A screen similar to the illustrated may appear when you stop play. Press [■, STOP] again and you can use this unit’s tuner to watch television. This screen is also shown when you are playing CDs.

■To pause play

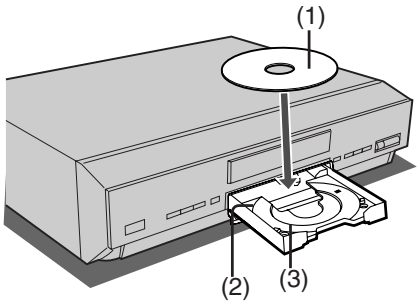
Press [❚❚, PAUSE].

Press again to restart playing.

■Auto power-off

The unit switches to the standby mode after about 2 or 6 hours in the stop mode if you set the time (page 75, Settings—Off Timer).

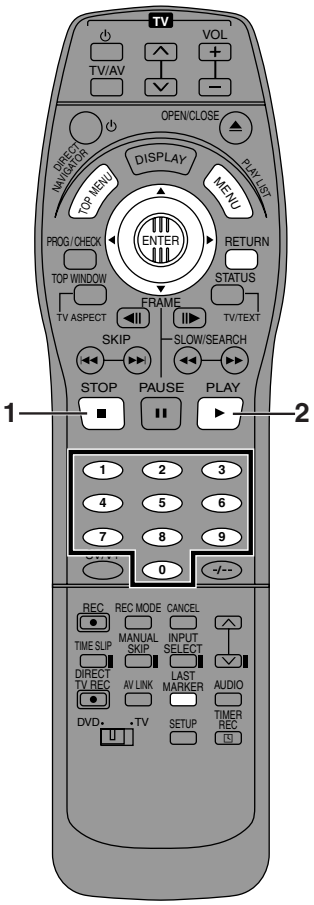
■With non-cartridge discs



(1) Insert label-up. (With double-sided discs, load so the label for the side you want to play is facing up.)

(2) Guide for 5″ (12 cm) disc

(3) Guide for 3″ (8 cm) disc



When a menu screen appears on the television

DVD-V VCD

Operate menus with the following operations. Actual operations depend on the disc.

Press the numeric buttons to select an item, or move the joystick [▲, ▼, ◄, ►] to select an item and press [ENTER].

- You can return to menus after you start play by pressing [TOP MENU] or [MENU] (DVD-Video), or [RETURN] (Video CD).

Note

- The disc continues to rotate while the menu is displayed even after you finish playing an item. Press [■, STOP] when you finish to preserve the unit's motor and your television screen.
- Volume may be lower when playing DVD-Video than when playing other discs or during television broadcasts.
  If you turn the volume up on the television or amplifier, ensure you reduce the volume again before playing other sources or returning to the television so that a sudden increase in output does not occur.

For your reference

- **If "⃠" appears on the television**
  The operation is prohibited by the unit or disc.
- If a disc is loaded, the unit will come on and play will start when you press [►, PLAY].
- If you play a disc that includes parts without video, the unit may display the video from the disc you were playing immediately before that disc.

Starting play from where you stopped it (Resume Function)

RAM DVD-R DVD-V CD VCD

1 During play
Press [■, STOP].
- The unit remembers the position.

2 Press [►, PLAY] while the indicated part of the center circle appears on the display.
- Play starts from where you stopped it.

■To cancel the resume function

Press [■, STOP] while the indicated part of the center circle appears on the display.
(The position is also cleared when you turn the unit off.)

■To start play from a memorized position after turning the unit off

Press [LAST MARKER] during play.
(The message "Position Memorized" appears on the television.)
Now when you press [►, PLAY] after switching the unit to standby and back on, play starts from the memorized position.

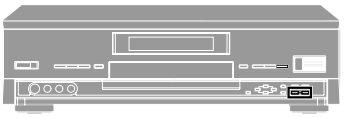
For your reference

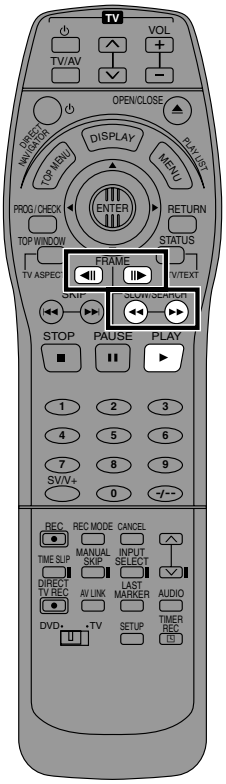
DVD-R DVD-V CD VCD

- The position memorized when you press [■, STOP] or [LAST MARKER] is cleared when you open the disc tray.

RAM

- The last marker is written to the disc and remains intact until you mark a different position. You cannot mark positions if the disc is write-protected with DISC INFORMATION (page 41) or with the write protect tab (page 90). Release the protection before marking position.
- If you press [■, STOP] before switching the unit to standby after pressing [LAST MARKER] to memorize a position, play will resume from the position you pressed [■, STOP] when you press [►, PLAY].
- The position memorized when you press [■, STOP] is cleared when you switch the unit to standby or if the unit switches to standby automatically (page 75, Settings—Off Timer).





Fast forward and rewind—SEARCH

RAM DVD-R DVD-V **CD** **VCD**

During play

Press [◀◀, SLOW/SEARCH] or [▶▶, SLOW/SEARCH].

[◀◀]: backward
[▶▶]: forward

- There are five search speeds. Each press increases the search speed.
- The search speed is maintained when you release the button.
- Press [▶, PLAY] to restart play.
- You will hear sound at speed one (only forward) when playing DVD-RAM, DVD-R, DVD-Video, and Video CDs. You can turn this sound off if you want to (page 76, Sound—Sound during Search).
- Sound is not heard during follow-on play and simultaneous recording and play.

Slow-motion play

RAM DVD-R DVD-V **VCD**

While paused

Press [◀◀, SLOW/SEARCH] or [▶▶, SLOW/SEARCH].

[◀◀]: backward (does not work with Video CDs)
[▶▶]: forward

- There are five slow-motion speeds. Each press increases the slow-motion speed.
- The slow-motion speed is maintained when you release the button.
- Press [▶, PLAY] to restart play.

Frame-by-frame viewing

RAM DVD-R DVD-V **VCD**

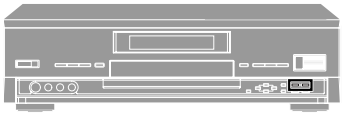
Remote control only

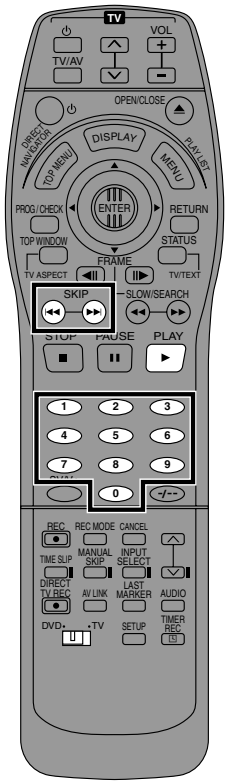
While paused

Press [◀❚❚, FRAME] or [❚❚▶, FRAME].

[◀❚❚]: backward (does not work with Video CDs)
[❚❚▶]: forward

- Each press shows the next or previous frame.
- Press [▶, PLAY] to restart play.





Skipping

RAM **DVD-R** **DVD-V** **CD** **VCD**

You can skip to the beginning of tracks (page 88) and chapters (page 88) and restart play from there.
On DVD-RAM and DVD-R, you can skip to the start of a programme and start play from there. The section between the point where recording is started and the point where it is stopped is called a “programme”.

During play or while paused

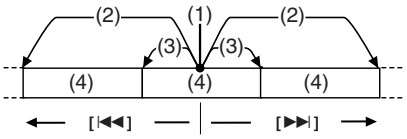
Press [|◀◀, SKIP] or [▶▶|, SKIP].

[|◀◀]: backward
[▶▶|]: forward
Each press increases the number of skips.

For your reference

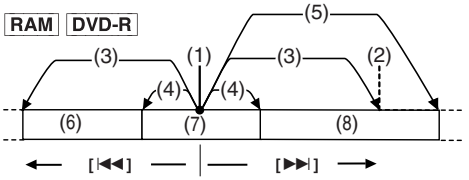
- After skipping, the unit returns to the previous state, play or pause.
- Press [▶, PLAY] to restart play if it was paused.
- Pressing [|◀◀] or [▶▶|] while a DVD menu is being shown or while the playback control feature on Video CDs (page 88) is working may take you to a menu screen.
- You can also mark positions to skip to (page 68).

DVD-V **CD** **VCD**



(1) Play position
(2) Twice
(3) Once
(4) Chapter/track

RAM **DVD-R**



(1) Play position
(2) Marker
(3) Twice
(4) Once
(5) Three times
(6) The programme before
(7) Current programme
(8) The programme after

Starting play from a selected programme, title, chapter or track

RAM **DVD-R** **DVD-V** **CD** **VCD**

Remote control only

Preparation

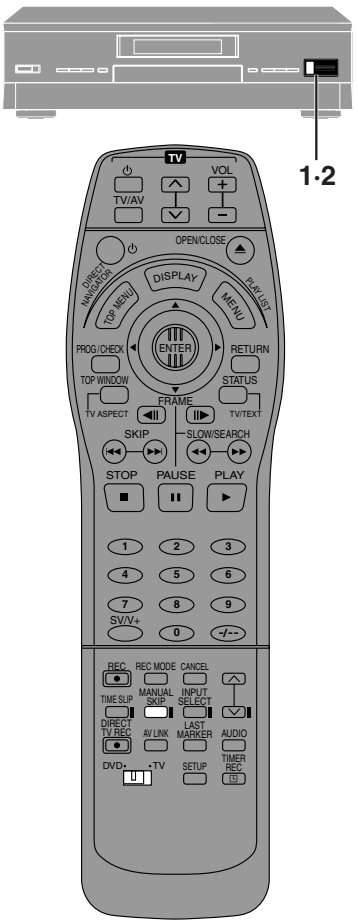
Switch [DVD, TV] to “DVD”.

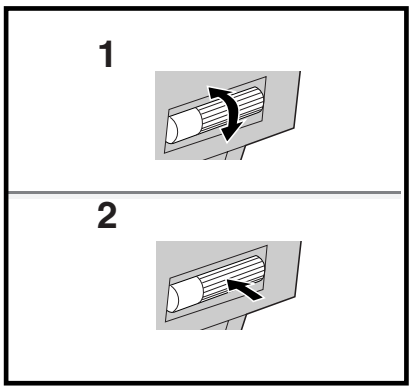
During play or while stopped

Press the numeric buttons to select the item.

(page 6)

- This works only when stopped with some discs (the screen saver is on the television).





Manual Skip

RAM DVD-R

Remote control only

You can skip commercials easily with this feature.

Preparation
Switch [DVD, TV] to “DVD”.

During play
Press [MANUAL SKIP].
Play restarts from approximately 30 seconds later.

Selecting an amount of time to skip—Time Slip

RAM DVD-R

Main unit only

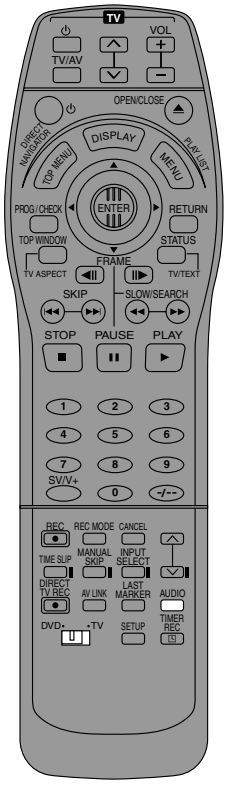
You can set an amount of time and then skip with one press of a button.

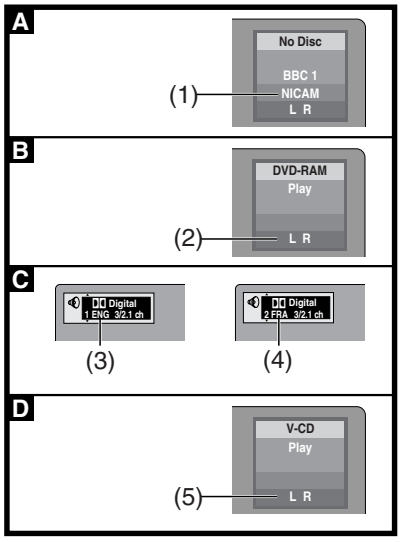
Preparation
Switch [DVD, TV] to “DVD”.

1 **During play**
Turn [TIME SLIP] on the main unit.
- Turn up to increase in one-minute units.
- Turn down to decrease in one-minute units.

2 **Within 5 seconds**
Press [TIME SLIP] on the main unit to enter the time.
- Play skips the time you entered.

Note
You cannot use this feature while a “DIRECT NAVIGATOR” (page 46) or “PLAY LIST” (page 55) screen is being displayed.





(1) e.g.: “Stereo” is selected
(2) e.g.: “LR” is selected
(3) e.g.: English is the selected language
(4) The language is switched to French
(5) e.g.: “LR” is selected

Changing audio

RAM DVD-V VCD

Remote control only

You can change the audio being received or played with the following procedure.

Preparation
Switch [DVD, TV] to “DVD”.

During reception or play

Press [AUDIO] to select the audio type.
How the type changes depends on when you press the button.

■While receiving a TV programme with NICAM A

Automatic indication of the type of sound system which the programme being watched (NICAM/MONO) is broadcast.

- If “NICAM OFF” is selected during manual tuning, [MONO] is always displayed.

■While playing a television programme recorded on DVD-RAM B

If it is a recording of a stereo broadcast

LR→L→R
↑_____↓

■While playing a DVD Video C

You can change the audio channel number each time you press the button. This allows you to change things like the soundtrack language.

■While playing a Video CD D

LR→L→R
↑_____↓

For your reference

- You can also use the on-screen menu icons to change the audio type.
- You can change the audio for the images being played with simultaneous recording and play and Time Slip.

■When you have connected the unit to other equipment with an optical digital cable

You cannot change the audio type when you have used only an optical digital cable for connection.

When using DVD-R

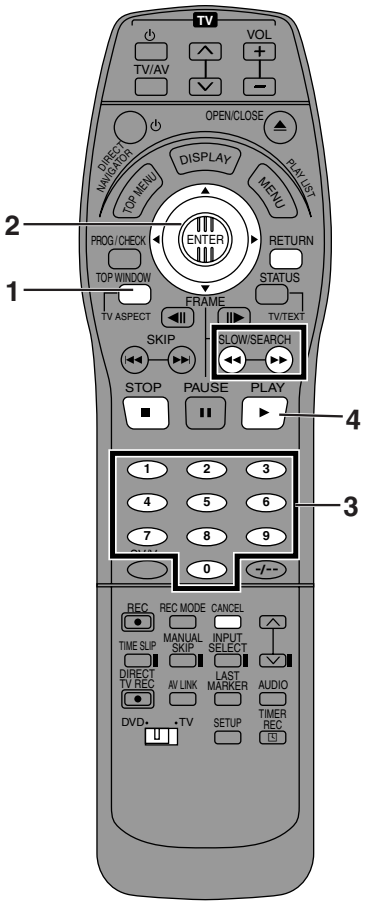
You cannot use [AUDIO] or the on-screen menu icons to change audio type while playing or recording with DVD-R.

- **While receiving a TV broadcast**

You can use the SET UP menus to select which audio type is recorded, either “M1” or “M2”. “M1” is the default setting.

- **During play**

The audio type selected for recording is played. This is displayed as “LR”.



Programme play

CD **VCD**

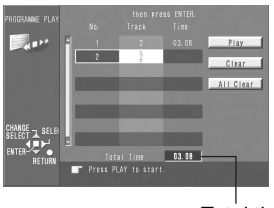
You can select up to 100 tracks to play in the order you choose.

Preparation
Switch [DVD, TV] to “DVD”.

1 While stopped
Press [TOP WINDOW].

2 Use the joystick [▲, ▼, ◄, ►] to select “PROGRAMME PLAY” and press [ENTER].

3 Press the numeric buttons to select the track.



Total time of the programme

Repeat step 3 to select other tracks.
- You can also use the joystick to select tracks.
  1) Press [ENTER], then use the joystick [▲, ▼] to select the track.
  2) Press [ENTER].

4 Press [►, PLAY].
- Play starts in the programmed sequence.

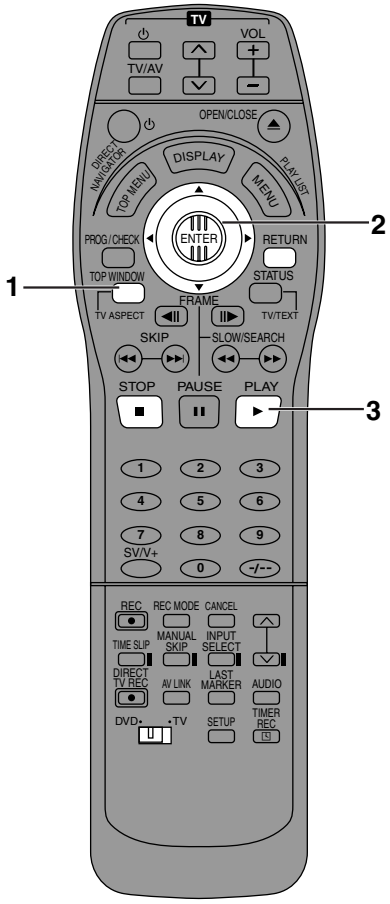
■To move to the page before or after the one shown
Press [◄◄] or [►►].

■To clear the programmed tracks one by one
1) Use the joystick [▲, ▼] to select the track you want to clear.
2) Press [CANCEL].

Alternatively, use the joystick [▲, ▼, ◄, ►] to select “Clear” and press [ENTER].

■To clear the whole programme
Use the joystick [▲, ▼, ◄, ►] to select “All Clear” and press [ENTER].
- The whole programme is also cleared when you turn the unit off or open the disc tray.

■To exit the programme mode
1) Press [■, STOP] until the programme play screen is displayed.
2) Press [TOP WINDOW] or [RETURN].



Random play

CD **VCD**

The unit plays the tracks on a disc in random order.

Preparation

Switch [DVD, TV] to “DVD”.

1 While stopped
Press [TOP WINDOW].

2 Use the joystick [▲, ▼, ◄, ►] to select “RANDOM PLAY” and press [ENTER].

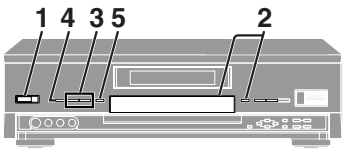
▽

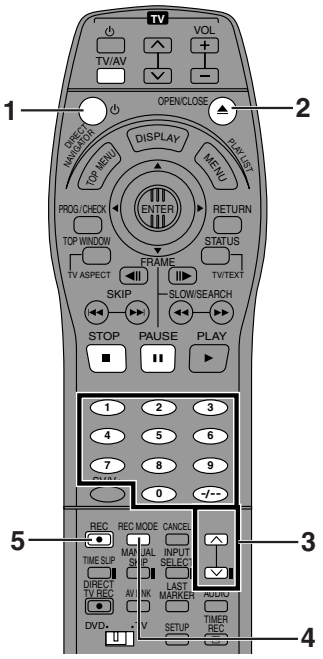
3 Press [►, PLAY].

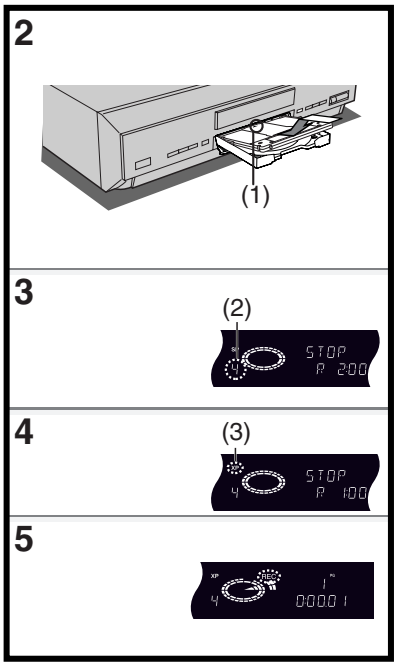
■To cancel random play

1) Press [■] until the random play screen appears.
2) Press [TOP WINDOW] or [RETURN].

Recording television programmes







(1) Insert label-up with the arrow facing in. (with double-sided discs, load so the label for the side you want to record is facing up.)
(2) e.g.: When you have selected channel 4
(3) e.g.: When you have selected "XP"

RAM DVD-R

Preparation

Switch [DVD, TV] to "DVD".

1 Press [⏻] to turn the unit on.

2 Press [⏏, OPEN/CLOSE] to open the tray and insert a disc.

- Insert one disc only within the tray's guides.
- Use a disc that can be recorded on and that has enough space available.
- Press [⏏, OPEN/CLOSE] to close the tray.
- When using a DVD-RAM for the first time with this unit, format it to ensure accurate recording (page 44, "Format"). Check the disc carefully to ensure it doesn't contain programmes you want to keep.

3 Press [∧, ∨] to select the channel.

4 Press [REC MODE] to select the recording mode.

- Select "XP", "SP", "LP", or "EP" (page 26).

5 Press [● REC] to start recording.

- Video system recorded on the disc is PAL system only.
- The programme is recorded into the available space on the disc.

■To pause recording

Press [❚❚, PAUSE].
Press again to restart recording.

■To stop recording

Press [■, STOP].

■To select channels with the remote control

Press the numeric buttons. (page 6)

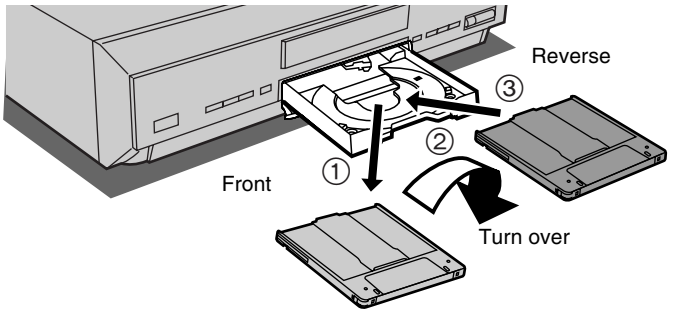
■Convenient features

- Follow-on play—playing from the beginning of the programme you are recording (page 28).
- Simultaneous recording and play—watching a programme you recorded while recording another (page 28).
- Time Slip-checking the images you are recording (page 29).

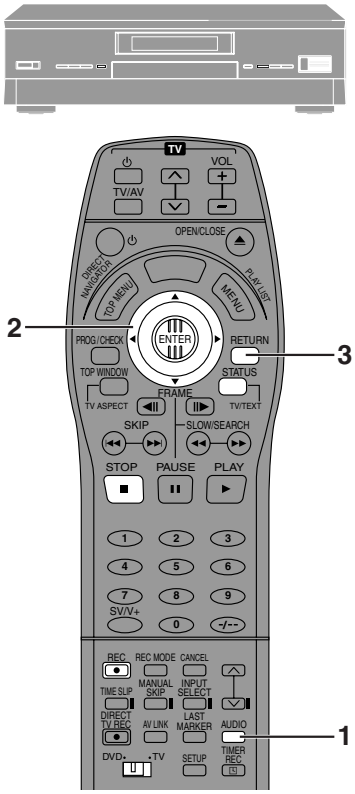
Note

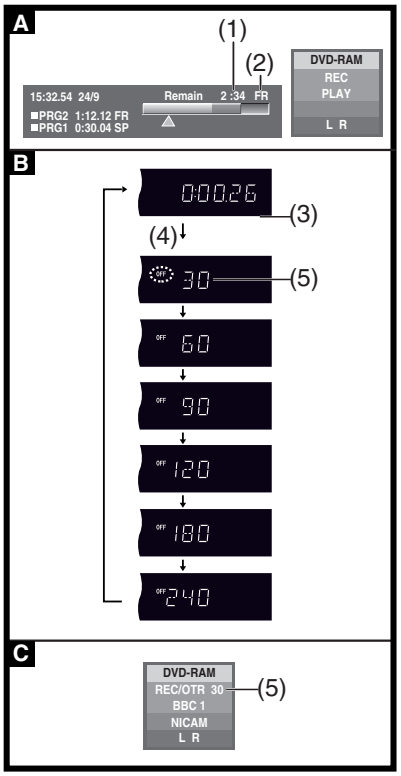
- Check that disc can be recorded on (page 8).
- Ensure the write protect tab is not set to "PROTECT" (page 90).
- Ensure the disc is not write-protected with DISC INFORMATION (page 42).
- Set "Input signal-TV System" to "PAL" when recording PAL system (page 77).
- Recording cannot be performed correctly if you try to record PAL system to a disc that already contains recordings using NTSC.

■Re-inserting double-sided discs



You can get up to 12 hours recording when you use double-sided discs and use the "EP" mode.





(1) Available recording time
(2) Recording mode
(3) Counter (Timer not set)
(4) Each time you press the button:
(5) Shows recording will stop in 30 minutes

■Recording modes

For example, with a 4.7 GB DVD-RAM

XP: High quality pictures, approximately one hour recording.
SP: Standard quality pictures than LP, approximately two hours recording.
LP: Better quality pictures than EP, approximately four hours recording.
EP: Lesser picture quality than LP, but capable of a maximum of six hours recording.

■To check the remaining time and the current mode during recording A

Press [STATUS] several times.

For your reference

- You can record up to 99 programmes on one disc.
- You cannot change the channel or recording mode during recording. You can change them while recording is paused, but the material is recorded as a separate programme.
- An error message appears if you try to start recording when a disc is full; the remaining time will be shown as “0:00”. To continue recording, erase unneeded programmes (DVD-RAM only (page 48), Erasing programmes) or use another disc.
- There are limitations when recording to DVD-R (page 9).
- The message “Can not record on the disc.” is displayed when recording was not completed correctly. Check the discs for dirt or scratches.

One Touch Recording-Specify a time to stop recording B

RAM DVD-R

Main unit only

This is a simple way of making timer recordings when you are in a hurry or before you go to bed. You can set the time up to 4 hours in advance.

While recording

Press [● REC] on the main unit to select the recording time.

The time increases as illustrated each time you press the button.
The counter decreases in 1-minute units after you set a time. You can change the time again with the same operation.
When the time you set is reached, recording stops and the unit switches to standby.

■To cancel

During recording, press [● REC] until the counter appears.

- Recording continues.

■To show the time remaining until recording finishes C

Press [STATUS] severel times.

For your reference

- This does not work during timer recordings.
- You cannot use the remote control to specify a time for recording to stop.
- Recording stops and the set time is cleared if you press [■, STOP].
- The set time is cleared if you pause recording and cause another programme to be recorded.

■To Manually Adjust the Audio Recording Level

The unit adjusts the recording level automatically to prevent sound distortion due to excessive peaks.
However, if you want to manually adjust the audio recording level, perform the operation steps below before you start the actual recording. We recommended you to adjust the level so that it peaks at approximately +4 dB on the recording level indicator.

1 Before recording, press [AUDIO] in 5 seconds or more.

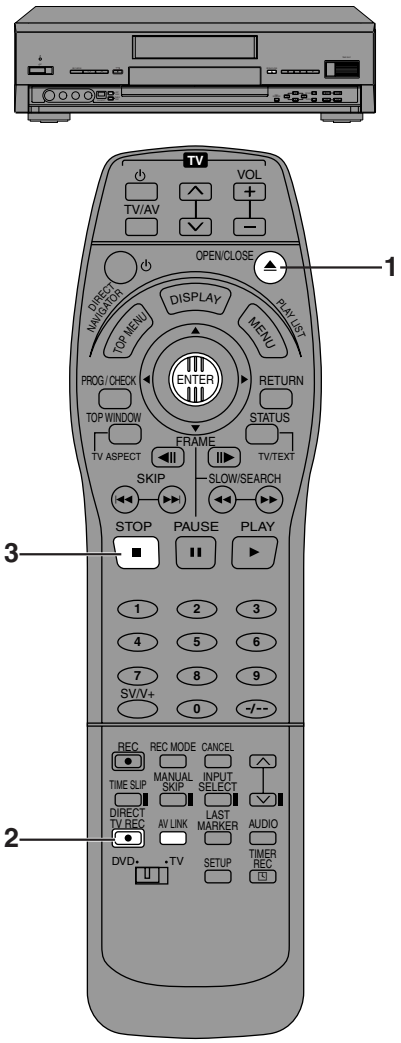
To adjust the left (L) and right (R) channels simultaneously:

2 Use the joystick [◄, ►] to adjust the audio recording level.

3 Press [RETURN] to exit the On Screen Display.

Note

- You cannot adjust the audio recording level when DV input recording.



■To immediately record the same TV programme that you are viewing on the TV (Direct TV Recording)

This function allows you to immediately start recording the same programme that you are viewing on the TV.

The programme position selected on the unit automatically changes to that of the TV programme that you are viewing on the TV. When you stop the recording, the unit automatically switches back to the previously selected programme position.

Conditions for correct operation of the Direct TV Recording function:

- **Your TV must be equipped with the [Q Link] function.**
- **The unit must be connected to the TV via a fully-wired 21-pin Scart cable.**

To perform Direct TV Recording:

1 Press [⏏, OPEN/CLOSE] to open the tray and insert a disc.

2 Press [DIRECT TV REC].

- Recording of the TV programme that you are viewing on the TV starts.
- In some cases, it may not be possible to change the programme position on the TV during Direct TV Recording.
- Do not press [AV LINK] during Direct TV REC, otherwise the recording may not be performed correctly.

3 Press [■, STOP] to stop recording.

■Linked timer recordings with external equipment (EXT LINK)

If external equipment (for example a satellite receiver) with a timer function is connected to the AV2 socket of this unit by a 21-pin cable, it is possible to control the recording of the unit from this equipment. For the connection to the external equipment, see page 72.

RAM DVD-R

Preparation

- Make sure that “AV2 Connection” is set to “Ext Link 1” or “Ext Link 2”. (page 77)
- Timer programming has to be done on the external equipment and switch to the timer recording standby mode. Refer to the equipment’s operating instructions.

Press [EXT LINK] on the unit to switch the unit over to the timer recording standby mode.

- The unit continues to record as long as the satellite or digital receiver is transmitting video.

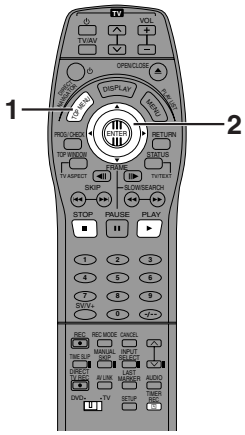
To delete it, press [ENTER].

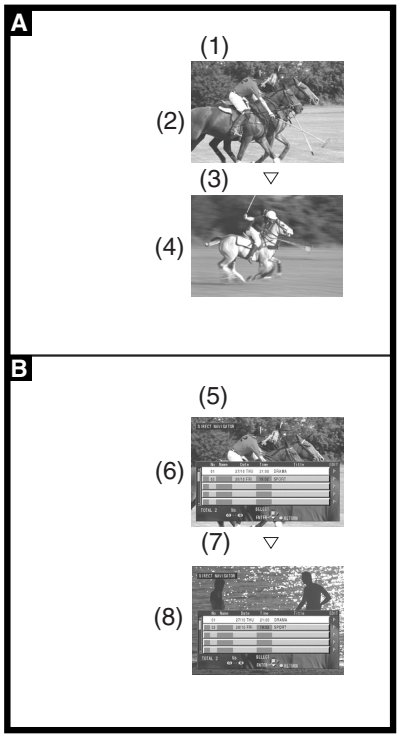
To cancel the external control, turn off the timer recording standby mode of the unit by pressing [EXT LINK] again.

For your reference

- To switch TV automatically to the picture from the unit in playback mode, connect the AV1 socket of this unit to the TV by a 21-pin cable.
- This function does not work with some equipment. Refer to the equipmentís operating instructions.
- The beginnings of recordings may not be recorded correctly in some cases.
- When “AV2 Connection” is set to “Ext Link 2”, this function does not work if the input signal is NTSC system.
- The play picture or menu picture is not output from AV2 socket during Linked timer recording standby mode.

Playing while you are recording





(1) For example: while recording programme 2 (sport)
(2) You want to watch the **sports programme** currently recording (programme 2)
(3) Do the above operation and...
(4) The same **sports programme** is recorded while you are watching it.
(5) For example: while recording programme 2 (sport)
(6) You want to watch the **soap opera** you recorded yesterday (programme 1)
(7) Do the above operation and...
(8) A **sports programme** is recorded while you watch a **soap opera**.

Playing from the beginning of the programme you are recording—Follow-on play A

RAM

You can start play from the beginning of a programme while continuing to record it.

Preparation
Switch [DVD, TV] to "DVD".

While recording or timer recording

Press [►, PLAY].
Play starts from the beginning of the programme being recorded.

■To stop play and recording

1) Press [■, STOP]. Play stops.
   Wait 2 seconds.
2) Press [■, STOP]. Recording stops.
   - You cannot stop recording with [■, STOP] during timer recording. To stop timer recording, press [◷, TIMER REC].

For your reference
- The playback images are displayed during follow-on play.
- Sound is not output while fast-forwarding.
- Play cannot be started until at least 2 seconds after recording starts.
- If you fast-forward and get to within a few seconds of the part being recorded, the picture will change to show the images currently being played.
- The operation is shown on the unit's display (page 7).
- If you fast forward to the part being recorded, there will be a small difference in time between the playback image and the recorded signal. (Approx. 4–5 seconds)

Simultaneous recording and play B

RAM

You can start play of the programme you are recording or play a programme previously recorded.

Preparation
Switch [DVD, TV] to "DVD".

During recording or timer recording

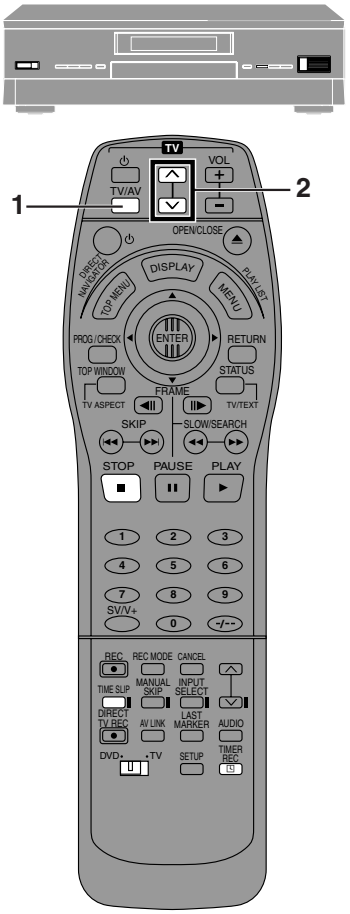
1 Press [TOP MENU, DIRECT NAVIGATOR].
- "●" is displayed in the direct navigator to indicate the programme is being recorded (page 47).

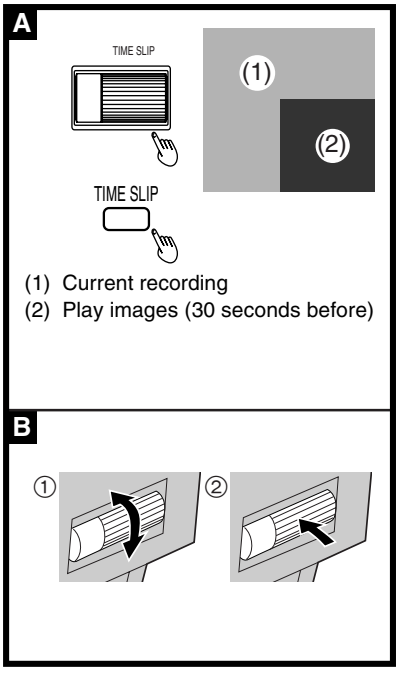
2 Use the joystick [▲, ▼] to select a programme and press [ENTER].

■To stop play and recording

1) Press [■, STOP]. Play stops.
   Wait 2 seconds.
2) Press [■, STOP]. Recording stops.
   - You cannot stop recording with [■, STOP] during timer recording. To stop timer recording, press [◷, TIMER REC].

For your reference
- During simultaneous rec and play, you cannot edit with the direct navigator or use play lists.
- If you start play while the unit is on standby for timer recording, recording starts when the time you set is reached.
- The unit returns to recording standby when you stop play while it is on standby for timer recording.
- The operation is shown on the unit's display (page 7).





(1) Current recording
(2) Play images (30 seconds before)

Checking the recording during recording (TIME SLIP) A

RAM

You can play the programme being recorded to check that it is being recorded correctly. You can also check parts that were recorded previously.

Preparation
Switch [DVD, TV] to "DVD".

While recording or timer recording

Press [TIME SLIP].

Play starts 30 seconds previous. For 5 seconds the play images are shown together with the recording.
The play images are shown in full once 5 seconds have passed.

■To change the part being played B

Main unit only

1) Turn [TIME SLIP] on the main unit.
   - ●Turn up to increase in one-minute units.
   - ●Turn down to decrease in one-minute units.
2) Press [TIME SLIP] on the main unit within 5 seconds to enter the time.
   Play starts from the time you entered.

Note
You cannot change the position being played with the remote control.

■To show both the recording and play images

Press and hold [TIME SLIP] for about 3 seconds.
- ●The picture-in-picture(2) screen becomes a full screen(1) if you perform play function other than normal play.

■To stop play and recording

1) Press [■, STOP]. Play stops.
   Wait 2 seconds.
2) Press [■, STOP]. Recording stops.
   - ●You cannot stop recording with [■, STOP] during timer recording. To stop timer recording, press [⏲, TIMER REC].

For your reference
- ●If you fast-forward, rewind, or skip during Time Slip, only the play images are shown.
- ●The sound for the images being played is heard during Time Slip.

Watching the television while recording

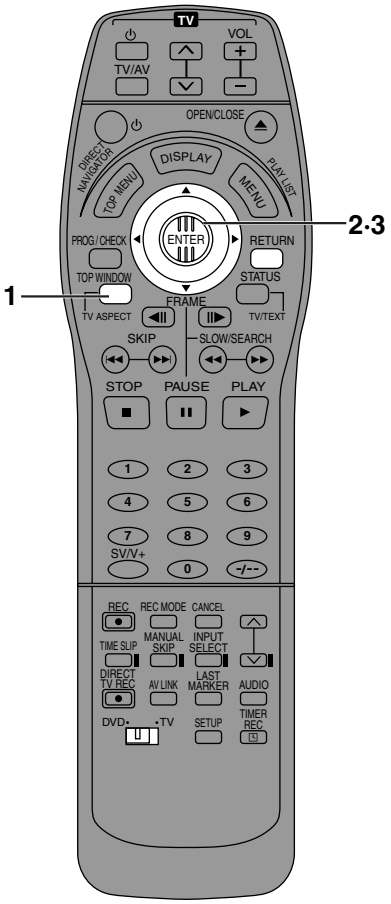
Preparation
Switch [DVD, TV] to "TV".

1 Press [TV, TV/AV] to change the input mode to "TV".

2 Press [TV, ∧, ∨] to change channels.
- ●You can also select the channel with the numeric buttons.

For your reference
- ●You can also do this if the unit is making a timer recording.
- ●The recording is unaffected.

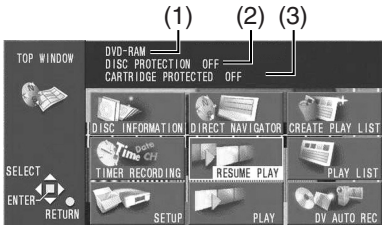
Using the top window



About the top window

Most of the features and functions of this unit can also be controlled with icons. The examples show the top window when a DVD-RAM is being used. Actual menus depend on the type of disc being used.

Disc display



(1) Disc title

- The disc's title is displayed if one is recorded. You can enter titles with Enter Title in DISC INFORMATION (page 41).

(2) Disc protection

- "ON" is displayed if you have used Disc Protection in DISC INFORMATION to protect the disc (page 42).

(3) Cartridge Protection

- "ON" is displayed if the cartridge's write protect tab is switched to "PROTECT" (page 90).

Using the top window

RAM DVD-R DVD-V CD VCD

Preparation

Switch [DVD, TV] to "DVD".

1 While stopped

Press [TOP WINDOW] to show the top window.

2 Use the joystick [▲, ▼, ◄, ►] to select an item.

- Refer to the relevant pages for details.

3 Press [ENTER].

- Your selection is entered and the top window disappears. If the operation requires further selections, another screen appears.

■To clear the top window

Press [TOP WINDOW] or [RETURN].

■Top window icons

DISC INFORMATION

Enter Title: RAM DVD-R (page 41)
Disc Protection: RAM (page 42)
Format: RAM (page 44)
Finalize: DVD-R (page 45)

TIMER RECORDING

Checking the timer programming: RAM DVD-R (page 37)
Registering programmes and making corrections: RAM DVD-R (page 35)
Canceling timer recordings: RAM DVD-R (page 36)

SET UP

Settings for the unit and discs: RAM DVD-R DVD-V CD VCD
Settings depend on the type of disc (page 75)

DIRECT NAVIGATOR

Play: RAM DVD-R (page 46)
Erase Programme: RAM DVD-R (page 48)
Enter Title: RAM DVD-R (page 49)
Properties: RAM DVD-R (page 50)
Protection: RAM (page 51)
Partial Erase: RAM (page 53)

PLAY

Disc play: RAM DVD-R DVD-V CD VCD (page 17)

RESUME PLAY

Start play from the point you stopped play: RAM DVD-R DVD-V CD VCD (page 18)

CREATE PLAY LIST

Creating play lists: RAM (page 56)

PLAY LIST

Play Scenes: RAM (page 58)
Playing Play Lists: RAM (page 57)
Edit Scenes: RAM (page 58, 59, 60)
PL Copy: RAM (page 61)
PL Erase: RAM (page 62)
Enter Title: RAM (page 63)
Properties: RAM (page 63)

TOP MENU
MENU

Example

Display a disc's menus: DVD-V (page 18)

PROGRAMME PLAY

Display the programme play screen: CD VCD (page 23)

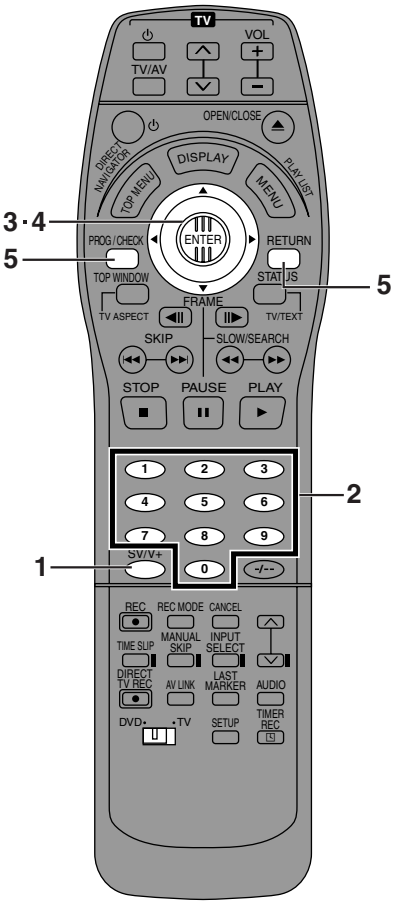
RANDOM PLAY

Display the random play screen: CD VCD (page 24)

DV AUTO REC

Display the DV input recording screen: RAM (page 69)

Some items will not be shown unless you release disc protection with DISC INFORMATION—Disc Protection (page 43) or release cartridge protection with the write protect tab (page 90).



Using Video Plus+ Codes to make timer recording *(For the United Kingdom)*

RAM **DVD-R**

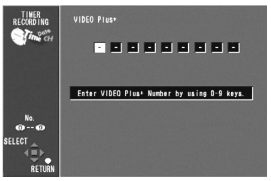
Remote control only

You can easily programme the unit to make a timer recording of a programme by entering the programme's Video Plus+ Codes, which can be found in the television sections of newspapers or in television guides. You can programme up to 16 programmes one month in advance. Programmes for everyday or every week are counted as one programme.

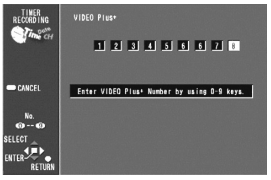
Preparation

- Switch [DVD, TV] to "DVD".
- Ensure that this units clock is set correctly.
- Insert a disc for recording (make sure there is enough room for the programme you are going to record plus a little extra).

1 Press [SV/V+].



2 Press the numeric buttons to enter the code.



- If you enter the wrong digit, use the joystick [◀] to move back and enter the correct digit.

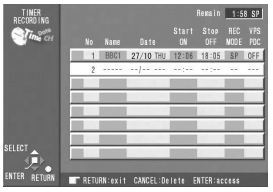
3 Press [ENTER].

- The Timer Programme Correction screen which allows you to confirm the programme appears and make corrections if necessary.

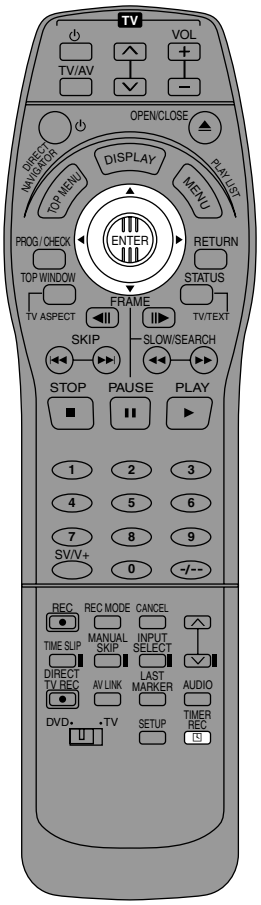
- **Check the programme.**
  To make corrections (page 33).
  To programme other recordings, repeat steps 1, 2, and 3.

4 If the programme is correct
Press [ENTER].

- The Timer Programme List screen appears.



5 Press [PROG/CHECK] or [RETURN].



■To put the unit on recording standby

Press [◷, TIMER REC].
Ensure "◷" lights on the unit's display.

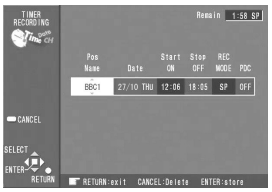
■Flexible recording mode (FR)

- The unit automatically selects a recording mode between "XP" and "EP" that will enable the timer recording to fit in the available recording time on the disc with the best possible recording quality.
- This only works with timer recording.
- It may not be possible to record to the finish of the programme if the remaining time doesn't allow.
- This does not work with PDC.

Note

- The built-in clock employs 24-hour system.
- The actual time recorded may be longer than the programme itself when television programmes are recorded using Video Plus+ Function.
- "Invalid Entry" is displayed when you enter the wrong code. Reenter the code.
- "FULL" is displayed in there are already 16 items programmed. Delete unnecessary items (page 48).
- The remaining time displayed is calculated based on the current recording mode.
- Approximetely 30 seconds at the beginning of subsequent programmes is not recorded when use timer recording to record multiple programmes to a DVD-R.
- Recording is not possible unless you set "Disc Protection" in "DISC INFORMATION" to "Off".
- You can not record to a disc if the write protect tab on a cartridge disc is set to protect. Release this before operation (page 90).
- If the unit is not put in the timer recording standby mode at the latest 10 minutes before the programmed timer recording starting time, the [◷] flashes on the unit display. In this case, press the [◷, TIMER REC] button to put the unit in the timer recording standby mode.

■To change the programme



Timer Programme Correction screen (from step 3 on page 32)

1) Use the joystick [◄, ►] to select the item you want to change.
2) Change the setting with the joystick [▲, ▼].
   The items change as follows:
   - **Pos/Name** (Programme Position/TV Station Name)
   - **Date**
     Current date→the day before one month later→Daily (Sunday to Saturday)→ Daily (Monday to Saturday)→Daily (Monday to Friday)→Weekly (Sundays)→ Weekly (Saturdays)
   - **Start ON (start time)/Stop OFF (finish time)**
     The time increases or decreases in 30-minute increments if you hold the button.
   - **REC MODE (Recording mode)**
     XP→SP→LP→EP→FR (page 26)
   - **PDC**
     ON→OFF (– – –) (page 34)
3) Press [ENTER] when you have finished making changes.
   The programme that the television is tuned to is shown.

■Using PDC to Control Start and End Time of Recording

(For the United Kingdom)

PDC stands for Programme Delivery control.
If a TV programme, for example a football game runs longer than scheduled, is shortened or starts earlier or later, this function synchronizes the recording start and stop with the actual broadcasting start and stop of the TV programme.
Conditions for correct operation of the PDC function:

- "ON" must be displayed under [PDC] on the On Screen Display.
- The TV station must broadcast PDC signals.
- The programme starting time must be set correctly to the starting time listed in the newspaper/ magazine.

To activate the PDC Function:

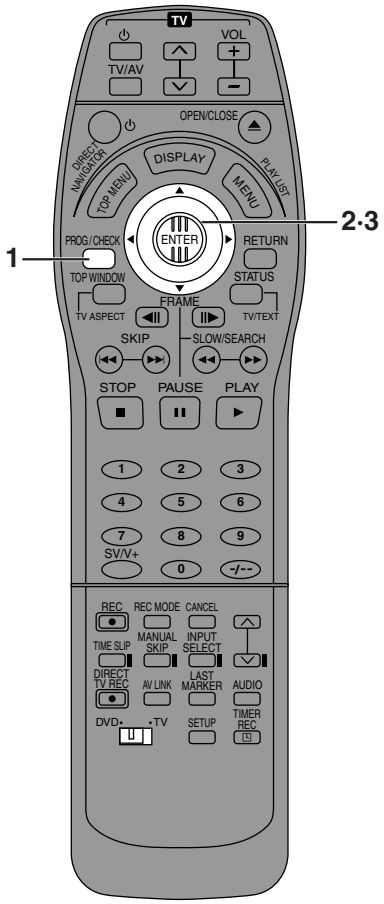
Use the joystick [▲, ▼] to make the "ON" indication appear.

■If "– –" appears under "Pos/Name" after entering a Video Plus+ code

Pos/Name stands for Programme Position/TV Station Name.
Normally, the name of the TV station or the number of the programme position is displayed under "Pos/Name".
However, if the TV station information was not automatically set during Preset Downroad or Auto Setup due to adverse reception conditions, the "– –" indication appears instead.
In such a case, follow the operation steps below to correct it.

Use the joystick [▲, ▼] repeatedly to select the programme position on which the TV programme to be recorded will be broadcast.

After you have entered the information of a TV station, it remains stored in the unit's memory, and you do not need to enter it again in the future.



Manual programming

RAM DVD-R

Remote control only

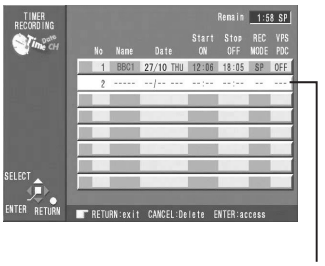
You can set your own programming conditions (up to 16 programmes).

Preparation

- Switch [DVD, TV] to “DVD”.
- Ensure that this unit’s clock is set correctly.
- Insert a disc for recording (make sure there is enough room for the programme you are going to record plus a little extra).

1 Press [PROG/CHECK].

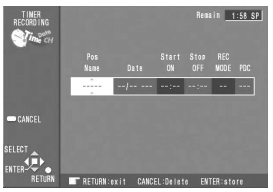
- The Timer Programme List screen appears.


TIMER RECORDING
Remain 1:58 SP
No Name Date Start ON Stop OFF REC MODE VPS PDC
1 BBC1 27/10 THU 12:06 18:05 SP OFF
2 ----- --/-- --- --:-- --:-- -- ---
SELECT
ENTER RETURN
RETURN:exit CANCEL:Delete ENTER:access

A line that is ready for programming highlighted.

2 Press [ENTER].

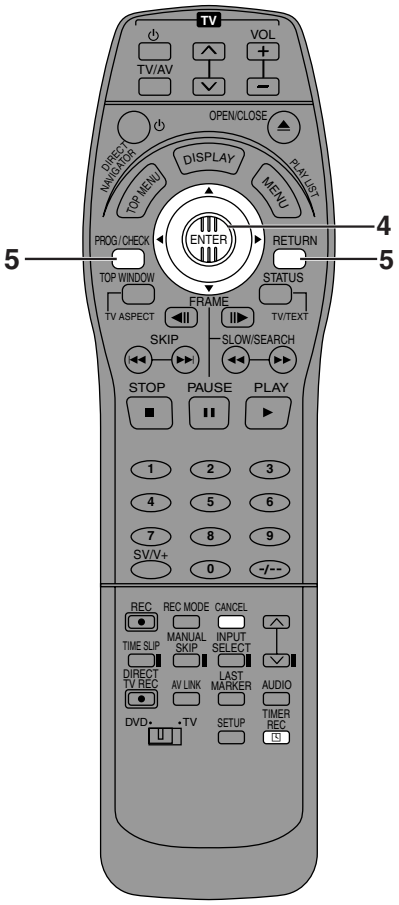
- The Timer Programme Correction screen appears.



3 Use the joystick [►] to move through the items and change the items with the joystick [▲, ▼].

- The current settings are shown each time you press [►].

- **Pos/Name** (Programme Position/TV Station Name)
- **Date**
  Current date→the day before one month later→Daily (Sunday to Saturday)→ Daily (Monday to Saturday)→Daily (Monday to Friday)→Weekly (Sundays)→ Weekly (Saturdays**)**
- **Start ON (start time)/Stop OFF (finish time)**
  The time increases or decreases in 30-minute increments if you hold the button.
- **REC MODE (Recording mode)**
  XP→SP→LP→EP→FR (page 26)
- **PDC**
  ON→OFF(– – –) (page 34)



4 Press [ENTER] when you have finished making changes.

- To continue programming:Repeat steps 2, 3, and 4.

5 Press [PROG/CHECK] or [RETURN].

Flexible recording mode (FR)

- The unit automatically selects a recording mode between “XP” and “EP” that will enable the timer recording to fit in the available recording time on the disc with the best possible recording quality.
- This only works with timer recordings.
- It may not be possible to record to the finish of the programme if the remaining time doesn’t allow.
- This does not work with PDC.

To put the unit on recording standby

Press [◷, TIMER REC].
Ensure “◷” lights on the unit’s display.

To change the timer recording programme

1) While the Timer Programme List Screen is being shown, use the joystick [▲, ▼] to select the programme you want to change, and press [ENTER] to show the Timer Programme Correction screen.
2) Move through the items with the joystick [►] and change the settings with the joystick [▲, ▼] and press [ENTER].

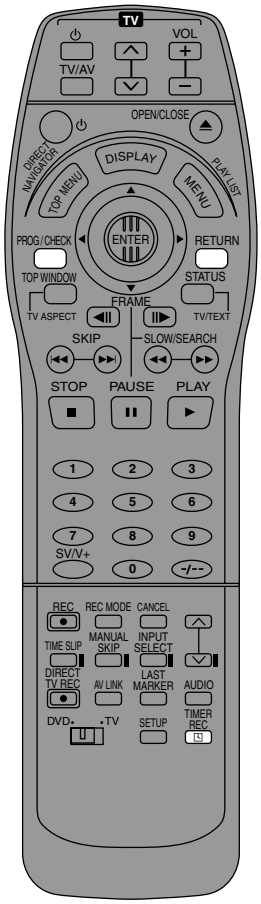
To clear a timer recording programme

Press [CANCEL] while the programme’s Timer Programme Correction screen is being shown.
Alternatively, use the joystick [▲, ▼] to select the programme in the Timer Programme List screen and press [CANCEL].

- You can not delete programmes that are currently recording.

Note

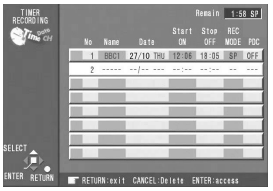
- If the disc is protected or full, the unit switches to standby but does not go on standby for recording. Check the disc carefully.
- The built-in clock employs 24-hour system.
- The remaining time is not shown if you insert discs other than DVD-RAM or DVD-R.
- The remaining time displayed is calculated based on the current recording mode.
- Approximetely 30 seconds at the beginning of subsequent programmes is not recorded when use timer recording to record multiple programmes to a DVD-R.
- Recording is not possible unless you set “Disc Protection“ in “DISC INFORMATION“ to “Off“.
- You cannot record to a disc if the write protect tab on a cartridge disc is set to protect. Release this before operation (page 90).
- If the unit is not put in the timer recording standby mode at the latest 10 minutes before the programmed timer recording starting time, the [◷] flashes on the unit display. In this case, press the [◷, TIMER REC] button to put the unit in the timer recording standby mode.



To check programmes

Press [PROG/CHECK].

The Timer Programme List screen appears.


TIMER RECORDING
Remain 1:58 SP
No Name Date Start ON Stop OFF REC MODE PDC
1 BBC1 27/10 Thu 12:06 18:05 SP OFF
2 ----- --/-- --- --:-- --:-- -- ---
SELECT
ENTER RETURN
RETURN:exit CANCEL:Delete ENTER:access

Icon explanations

- Ⓦ The programme contents are repeated in another programme.
- ● This programme is currently recording.
- Ⓕ The disc was full or the maximum number of programmes or scenes was reached so the programme failed to record.
- The television programme was copy-guarded so the programme failed to record.
- Ⓧ The programme failed to record for some other reason.

■To change the programme

(page 36)

■To exit from the Timer Programme List screen

Press [PROG/CHECK] or [RETURN]. (The programme the television is tuned to is shown.)

For your reference

- Programmes that failed to record are displayed grey. These programmes are deleted from the list at 4 a.m. the day after tomorrow.

Starting and canceling programmes

■To put the unit on recording standby

Press [◷, TIMER REC].

The unit turns off and "◷" lights on the unit's display.

Note

- The unit cannot go to timer recording standby if the disc is protected or full ("◷" flashes). Check the disc carefully.

■To release the unit from recording standby

If you want to record something else before the programme start time, for example:

Press [◷, TIMER REC].

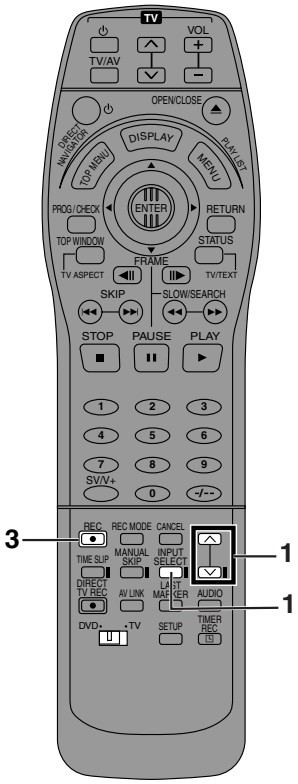
The unit turns on and "◷" goes out.

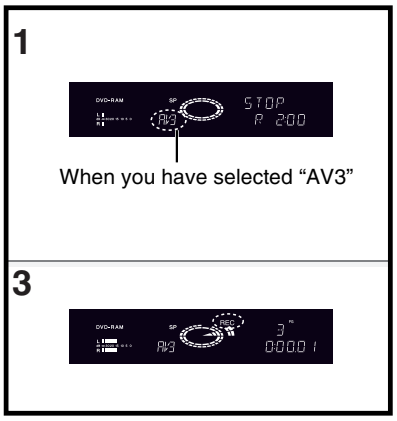
- Be sure to press [◷, TIMER REC] before the programme start time to put the unit on recording standby. The programme only works if "◷" is on.

■To stop recording while a programme is working

Press [◷, TIMER REC].

Recording from a video cassette player





When connected to non-DV equipment

RAM **DVD-R**

You can record audio and video being played on a video cassette player or video camera connected to the input terminals.

Preparation

- Before connecting any cables, first make sure that the power for both units is off. Then after connecting any cable, turn on the both units.
- Connect the other equipment to this unit’s input terminals (page 73).
- Switch [DVD, TV] to “DVD”.
- Insert a disc that can be recorded on.
- Select the recording mode, XP, SP, LP, or EP (page 26).

1 While stopped

Press [∧, ∨] or [INPUT SELECT] to select the input channel for the equipment you have connected.

- Select AV1, AV2, AV3 or AV4.

2 Start play on the other equipment.

3 Press [●, REC] at the point you want to start recording.

When connected to DV equipment

RAM **DVD-R**

You can record audio and video being played on a DV equipment connected to the input terminals.

Preparation

- Before connecting any cables, first make sure that the power for both units is off. Then after connecting any cable, turn on the both units.
- Connect the other equipment to this unit’s input terminals (page 69).
- Use a DV cable to connect the equipment.
- Switch [DVD, TV] to “DVD”.
- Insert a disc that can be recorded on.
- Select the recording mode, XP, SP, LP, or EP (page 26).

1 While stopped

Press [∧, ∨] or [INPUT SELECT] to select the input channel for the equipment you have connected.

- Select DV.

2 Start play on the other equipment.

3 Press [●, REC] at the point you want to start recording.

For your reference

We recommend connecting one piece of DV equipment at a time.

DV Source (page 8)	Audio Mode for DV Input	Bilingual Selection for DVD-R	REC&Output AUDIO	
			L ch	R ch
STEREO	STEREO1	M1	L1	R1
	STEREO2		L2	R2
	Mix		L1+L2	R1+R2
Bilingual	STEREO1		L1	L1
	STEREO2		L2	L2
	Mix		*L1+L2	*R1+R2
STEREO	STEREO1	M2	L1	R1
	STEREO2		L2	R2
	Mix		L1+L2	R1+R2
Bilingual	STEREO1		R1	R1
	STEREO2		R2	R2
	Mix		*L1+L2	*R1+R2

*The audio is recorded as stereo if the DV source is “Bilingual” and you select “Mix”.

■To skip unwanted parts

Press [❚❚, PAUSE] to pause recording.
Press again to restart recording.

■To stop recording

Press [■, STOP].

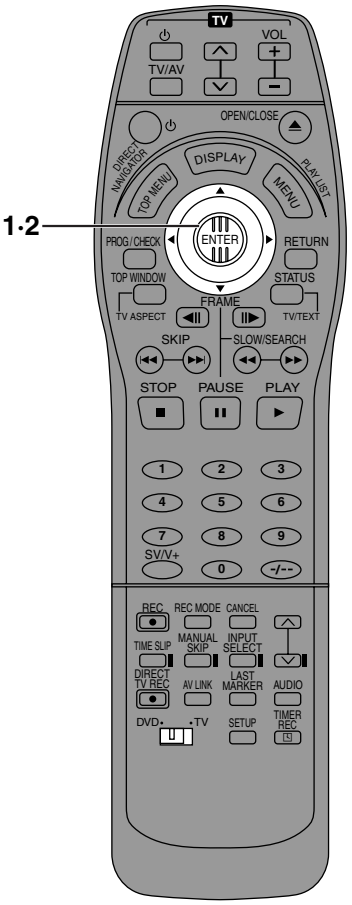
Note

Stop play on the other equipment as well.

For your reference

Poor video quality or colouring may indicate that the material you are recording has copy protection.

Entering titles

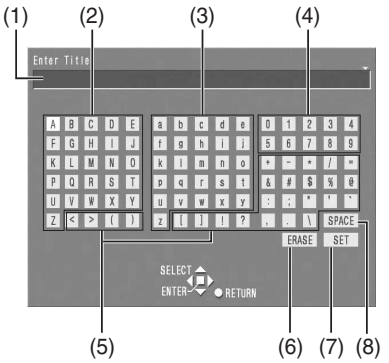


RAM **DVD-R**

You can:
- Title discs with the DISC INFORMATION in the Top Window (page 41).
- Title programmes with the DIRECT NAVIGATOR (page 49).
- Or title play lists with the PLAY LIST screen (page 63).

Preparation
- Switch [DVD, TV] to "DVD".
- Insert a disc with something recorded on it.
- Select Titling "DISC INFORMATION", Titling "DIRECT NAVIGATOR", or Titling "PLAY LIST" screen.

1 After the titling screen appears
Use the joystick [▲, ▼, ◄, ►] to select the character you want to enter and press [ENTER].
- You can enter the following characters.



(1)This window shows the text you have entered (Title field)
(2)Capital letters
(3)Lower-case letters
(4)Numbers
(5)Symbols
(6)ERASE
(7)SET (when you have finished entering text)
(8)SPACE

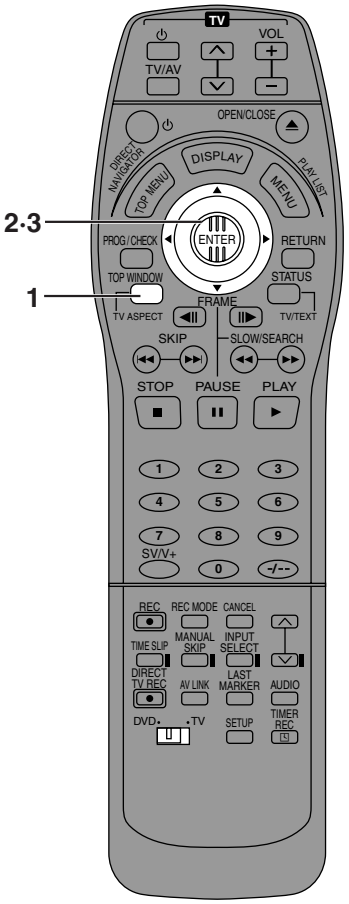
■To enter other characters
Repeat step 1.

2 Use the joystick [▲, ▼, ◄, ►] to select "SET" and press [ENTER].
- The title is entered and the screen disappears.

■To correct a character
1) Use the joystick [▲, ▼, ◄, ►] to select the character you want to correct in the title field.
2) Use the joystick [▲, ▼] to move outside the title field.
3) Use the joystick to select "ERASE" and press [ENTER]. The last character is erased.
4) Use the joystick to select the correct character and press [ENTER].

Note
- Even if you have entered up to the maximum number of characters, characters you enter after the position marked with "▼" in the title field and the character immediately prior to the mark will be replaced with "..." when displayed in the direct navigator and play list lists.
- You cannot enter titles if the programme is protected. Release the protection with the direct navigator. (page 52)
- You cannot enter titles unless the "Disc Protection" in DISC INFORMATION is "Off". (page 43)
- You cannot enter titles if the disc is protected with the write protect tab (page 90).

DISC INFORMATION



About DISC INFORMATION

RAM DVD-R

- You can give discs titles—Enter Title
- You can write-protect and write-enable DVD-RAM—Disc Protection
- You can format DVD-RAM—Format
- You can finalize DVD-R so they can be played on compatible DVD players—Finalize

Enter Title

RAM DVD-R

Each disc can be given a different title.

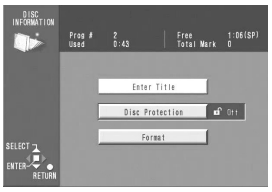
Preparation

- Switch [DVD, TV] to "DVD".
- Insert a disc you have recorded on.

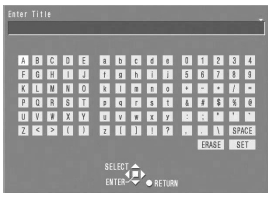
1 While stopped
Press [TOP WINDOW].

2 Use the joystick [▲, ▼, ◄, ►] to select "DISC INFORMATION" and press [ENTER].

3 Use the joystick [▲, ▼] to select "Enter Title" and press [ENTER].



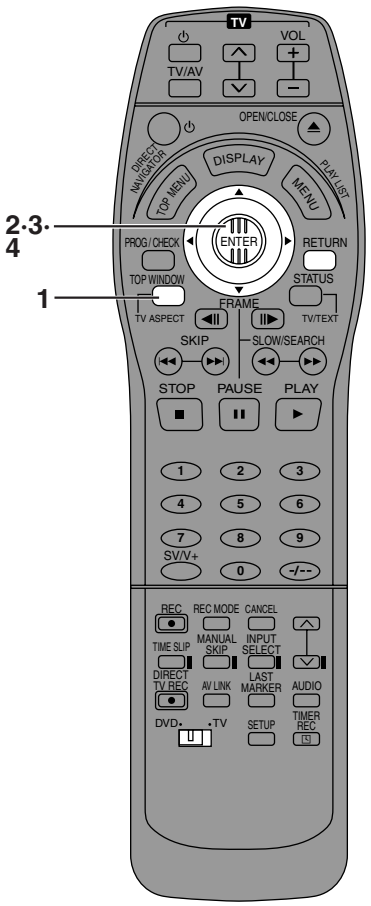
4 Enter the title.



- "Entering titles" (page 40)

Note

- You can give DVD-RAM titles of up to 64 characters and DVD-R titles of up to 40 characters.
- You cannot give DVD-R titles once they have been finalized.



Disc Protection

RAM

This allows you to protect discs from accidental erasure.

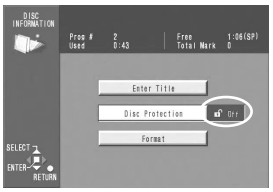
Preparation

- Switch [DVD/TV] to "DVD".
- Insert the disc you want to protect.

1 While stopped
Press [TOP WINDOW].

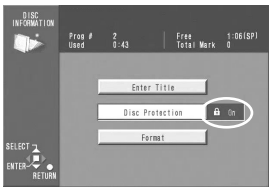
2 Use the joystick [▲, ▼, ◄, ►] to select "DISC INFORMATION" and press [ENTER].

3 Use the joystick [▲, ▼] to select "Disc Protection" and press [ENTER].



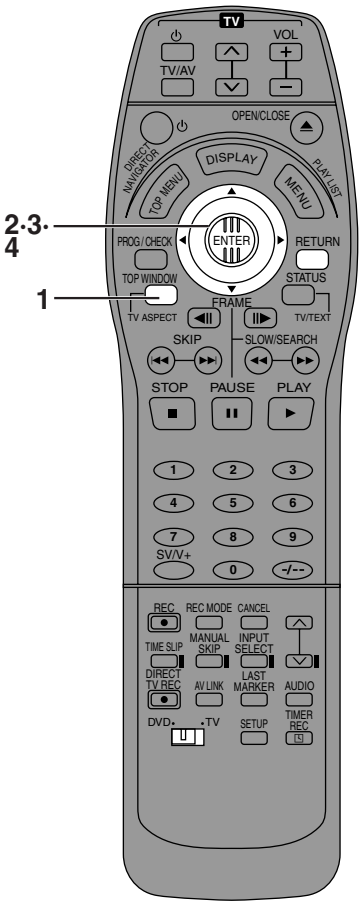
4 Use the joystick [◄] to select "Yes" and press [ENTER].

▽



■To stop partway through

Select "No" in step 4 and press [ENTER].
Or
Press [RETURN].



Releasing disc protection

RAM

This allows you to release disc protection.

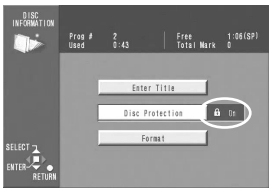
Preparation

- Switch [DVD, TV] to “DVD”.
- Insert the disc you want to release protection.

1 While stopped
Press [TOP WINDOW].

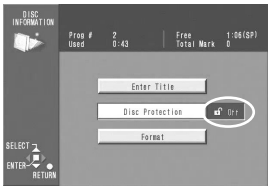
2 Use the joystick [▲, ▼, ◄, ►] to select “DISC INFORMATION” and press [ENTER].

3 Use the joystick [▲, ▼] to select “Disc Protection” and press [ENTER].



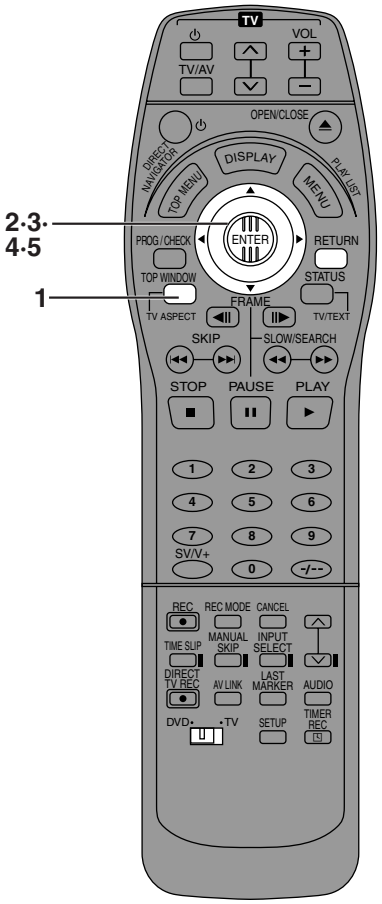
4 Use the joystick [◄] to select “Yes” and press [ENTER].

▽



■To stop partway through

Select “No” in step 4 and press [ENTER].
Or
Press [RETURN].



Format

RAM

Some DVD-RAM are unformatted. You must format these discs before you can use them in this unit. Formatting also allows you to erase the entire contents of a disc.

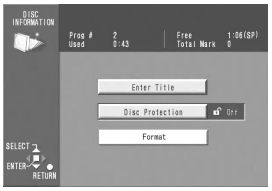
Preparation

- Switch [DVD, TV] to "DVD".
- Insert the disc you want to format.

1 While stopped
Press [TOP WINDOW].

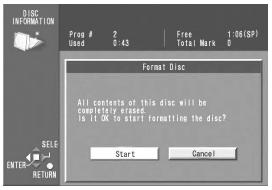
2 Use the joystick [▲, ▼, ◄, ►] to select "DISC INFORMATION" and press [ENTER].

3 Use the joystick [▲, ▼] to select "Format" and press [ENTER].



4 Use the joystick [◄] to select "Yes" and press [ENTER].

5 Use the joystick [◄] to select "Start" and press [ENTER].



- Formatting starts.
  The message "Formatting is completed" appears when formatting is finished.

All recordings are irretrievably erased when a disc is formatted. Check the disc carefully before formatting to ensure it doesn't contain any programmes you want to keep.

■To stop formatting

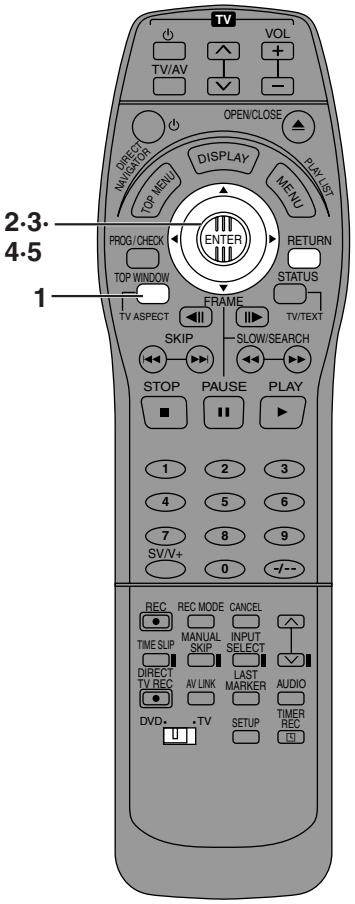
Select "No" in step 4 or "Cancel" in step 5 and press [ENTER].
Or
Press [RETURN].

Note

- **Do not turn the unit off or disconnect the AC power supply cord while the message "Formatting the disc" is on the television.**
  This can render the disc unusable.
  (This can take up to 70 minutes. You can cancel formatting if it takes more than 2 minutes by pressing [RETURN]. The disc must be reformatted if you do this.)
- All data on the disc is erased when it is formatted, including recordings made with this unit. Data written to the disc by a computer is also erased.

For your reference

- The disc cannot be formatted if the write protect tab is switched to "PROTECT". Release the protection to continue (page 90).
- Formatting cannot be performed on DVD-R or CD-R/RW.
- The message **"Unable to format"** appears when you try to format discs this unit cannot use.
- If you have used the direct navigator to protect a programme or disc, the message **"Contents on the disc have been protected. Start formatting the disc?"** appears in step 5. Select "Start" if you want to format the disc. The contents will be erased even if they have been protected.



Finalize — Creating DVD-Video

DVD-R

You can play DVD-R on compatible DVD players by finalizing them on this unit, effectively making them into DVD-Video.
The menus you create with this unit can also be used on the player.

Preparation

- Switch [DVD, TV] to "DVD".
- Insert the disc you want to finalize.

1 While stopped
Press [TOP WINDOW].

2 Use the joystick [▲, ▼, ◄, ►] to select "DISC INFORMATION" and press [ENTER].

3 Use the joystick [▲, ▼] to select "Finalize" and press [ENTER].

4 Use the joystick [◄] to select "Yes" and press [ENTER].

5 Use the joystick [◄] to select "Start" and press [ENTER].

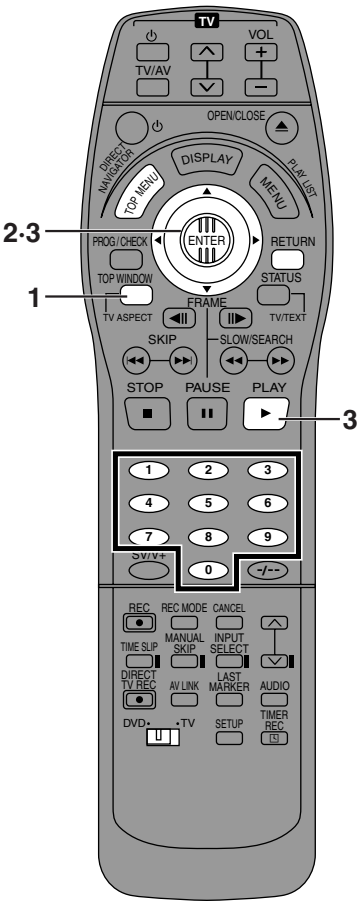
- Finalizing starts.
  The message "Finalizing is finished" appears when finalizing is finished.

Note

- Do not turn the unit off or disconnect the power supply cord while the messeage "Finalizing" is on the television. This can render the disc unusable.
- You can only finalize DVD-R that were recorded on this unit.
- You cannot record on DVD-R that have been finalized.
- The markers you entered (page 68) will be lost.
- Finalizing takes up to 15 minutes.

■To stop finalizing

Select "No" in step 4 or "Cancel" in step 5 and press [ENTER].
Or
Press [RETURN].



Selecting programmes to play

RAM DVD-R

A list of programmes is created as you record them. You can use this list to find the programmes you want to watch.

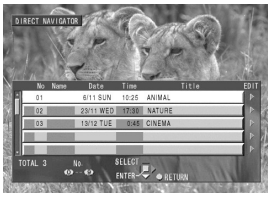
Preparation

- Switch [DVD, TV] to "DVD".
- Insert a disc you have recorded on.

1 While stopped
Press [TOP WINDOW].

2 Use the joystick [▲, ▼, ◄, ►] to select "DIRECT NAVIGATOR" and press [ENTER].

- The programme list appears.
- The images for the currently highlighted list are played in the background.



3 Use the joystick [▲, ▼] to select the programme you want to watch and press [ENTER] or [►, PLAY].

For example, when you select programme number 2.

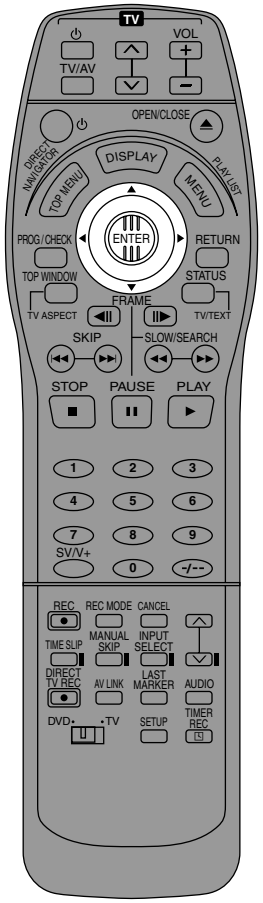
- Play of the images that were playing in the background continues.

■To clear the programme list

Press [TOP MENU, DIRECT NAVIGATOR] or [RETURN].

For your reference

- You can also display the programme list by pressing [TOP MENU, DIRECT NAVIGATOR] in step 1. The direct navigator works while stopped, playing or recording.
- You can also select programmes from the list in step 3 by entering a 2-digit number with the numeric buttons (page 6) and pressing [ENTER].
  If you enter a number larger than the total number of programmes, the last programme is selected.
- Titles are only displayed if you have given the programme a title.



About the programme list

a) Programme number, broadcast name, recording date, time recording started, programme title (if entered)**.**
- Programme 1 is selected in the example.

b) Write-protected:
- Displayed when you have protected the programme. Programme 2 has been protected in the example.

c) Copy-protected:
- Displayed when you have recorded a programme that has copy protection, from broadcast.

d) Unable to play:
- Displayed if you cannot play the programme.

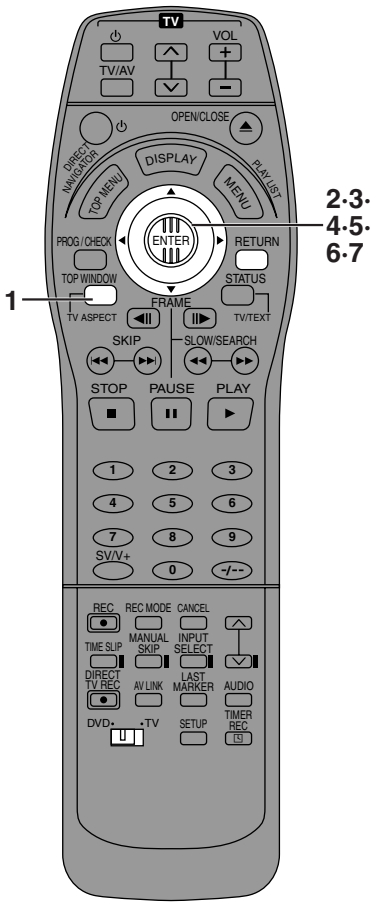
e) Currently recording:
- Displayed when the programme is being recorded.

f) Scroll bar
- If there are more than six programmes, you can move down the list by using the joystick [▲, ▼] and this bar shows your approximate position in the list.

g) Total number of programmes
- Shows the total number of programmes.

h) Sub menu
- Displayed when you use the joystick [►]. (You can see this during simultaneous recording and play but you are unable to perform operations.)
- Erase a programme (page 48).
- Enter or edit a title (page 49).
- Check a programme's contents (page 50).
- Write-protect a programme (page 51).
- Erase part of a programme (page 53).

For your reference
- The list can show up to 99 programmes that you have recorded or programmed to record.
- The message **"Cannot record. Maximum amount of scenes exceeded"** is displayed if you try to start recording when there are already 99 programmes on a disc. Erase unneeded programmes (DVD-RAM only) or use a new disc to continue recording.
- When using DVD-R, "Protection" and "Partial Erase" are not displayed in the submenu.
- The contents of the list are recorded on the disc.



Erasing programmes

RAM DVD-R

The programme is erased completely when you use this procedure and cannot be retrieved. Check the programme carefully before erasing it to ensure it isn't one you want to keep.

Preparation

- Switch [DVD, TV] to "DVD".
- Insert a disc you have recorded on.

1 While stopped
Press [TOP WINDOW].

2 Use the joystick [▲, ▼, ◄, ►] to select "DIRECT NAVIGATOR" and press [ENTER].

3 Use the joystick [▲, ▼] to select the programme you want to erase.

4 Use the joystick [►] so the submenu appears.

5 Use the joystick [▲, ▼] to select "Erase Programme" and press [ENTER].

6 Use the joystick [◄] to select "Erase".

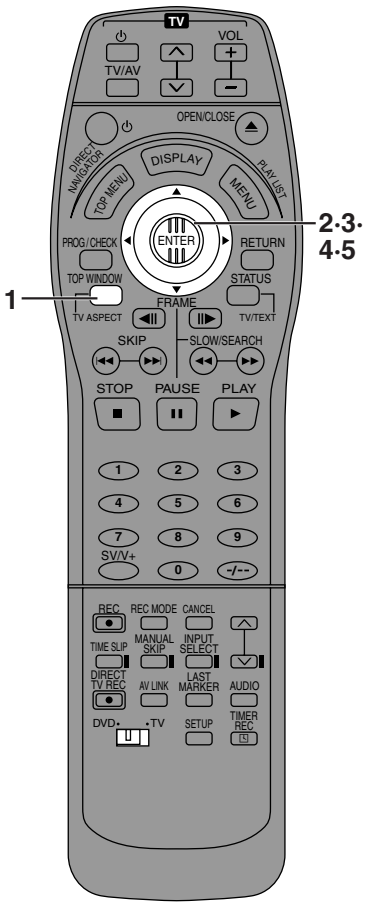
7 Press [ENTER].

■To stop partway through

Select "Cancel" in step 6 and press [ENTER].
Or
Press [RETURN].

For your reference

- The disc's available recording time may not increase after erasing short programmes.
- Computer data is not erased.
- The available recording time on DVD-R does not increase when you erase programmes.



Entering and editing programme titles

RAM DVD-R

Preparation

- Switch [DVD, TV] to “DVD”.
- Insert a disc you have recorded on.

1 While stopped
Press [TOP WINDOW].

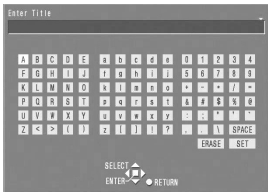
2 Use the joystick [▲, ▼, ◄, ►] to select “DIRECT NAVIGATOR” and press [ENTER].

3 Use the joystick [▲, ▼] to select the programme whose title you want to enter or edit.

4 Use the joystick [►] so the submenu appears.

5 Use the joystick [▲, ▼] to select “Enter Title” and press [ENTER].

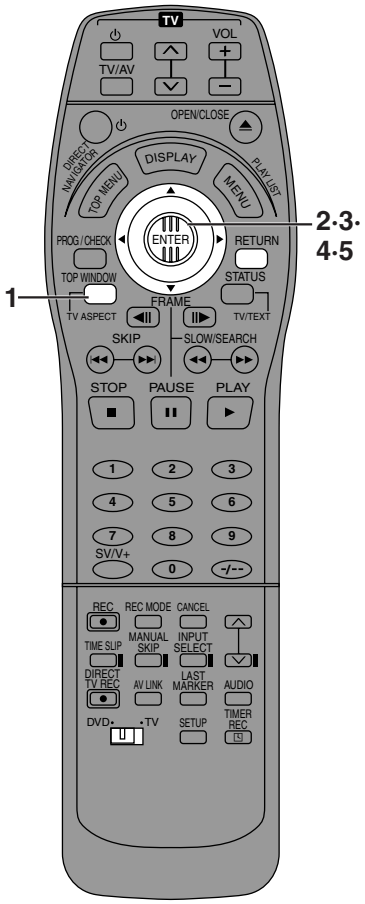
6 Enter or edit the title.



- “Entering titles” (page 40)

For your reference

You can give DVD-RAM titles of up to 64 characters and DVD-R titles of up to 44 characters.



Checking programme contents

RAM DVD-R

You can check the contents of a selected programme.

Preparation

- Switch [DVD, TV] to "DVD".
- Insert a disc you have recorded on.

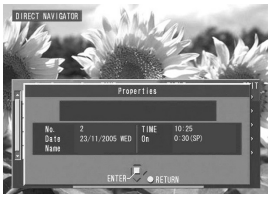
1 While stopped
Press [TOP WINDOW].

2 Use the joystick [▲, ▼, ◄, ►] to select "DIRECT NAVIGATOR" and press [ENTER].

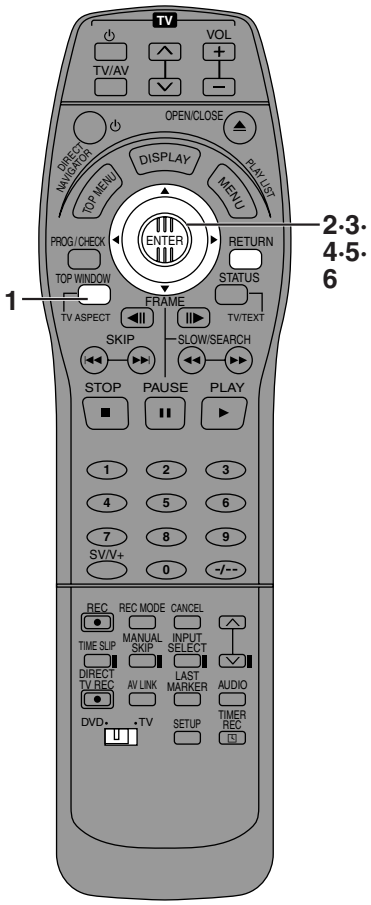
3 Use the joystick [▲, ▼] to select the programme whose contents you want to check.

4 Use the joystick [►] so the submenu appears.

5 Use the joystick [▲, ▼] to select "Properties" and press [ENTER].
The contents of the programme are shown.



■To return to the previous screen
Press [RETURN].



Protecting programmes

RAM

You can prevent accidental erasure of programmes by write-protecting them.

Preparation

- Switch [DVD, TV] to "DVD".
- Insert a disc you have recorded on.

1 While stopped
Press [TOP WINDOW].

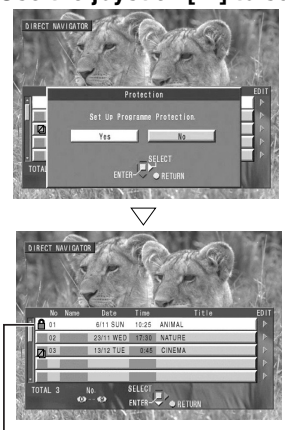
2 Use the joystick [▲, ▼, ◄, ►] to select "DIRECT NAVIGATOR" and press [ENTER].

3 Use the joystick [▲, ▼] to select the programme you want to protect.

4 Use the joystick [►] so the submenu appears.

5 Use the joystick [▲, ▼] to select "Protection" and press [ENTER].

6 Use the joystick [◄] to select "Yes" and press [ENTER].



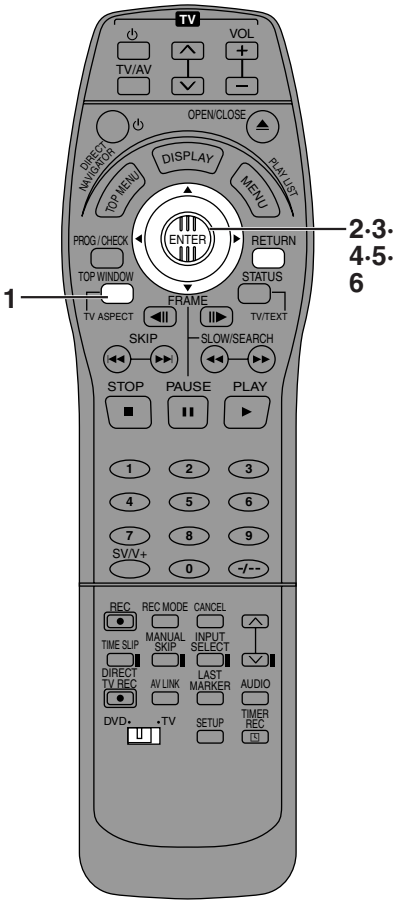
The padlock mark appears.

■To stop partway through

Select "No" in step 6 and press [ENTER].
Or
Press [RETURN].

For your reference

Programmes will be erased even if they are protected if you format the disc with DISC INFORMATION (page 44).



Releasing programme protection

RAM

Preparation

- Switch [DVD, TV] to “DVD”.
- Insert a disc you have recorded on.

1 While stopped
Press [TOP WINDOW].

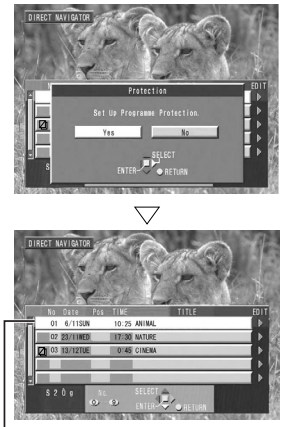
2 Use the joystick [▲, ▼, ◄, ►] to select “DIRECT NAVIGATOR” and press [ENTER].

3 Use the joystick [▲, ▼] to select the programme you want to unprotect.

4 Use the joystick [►] so the submenu appears.

5 Use the joystick [▲, ▼] to select “Protection” and press [ENTER].

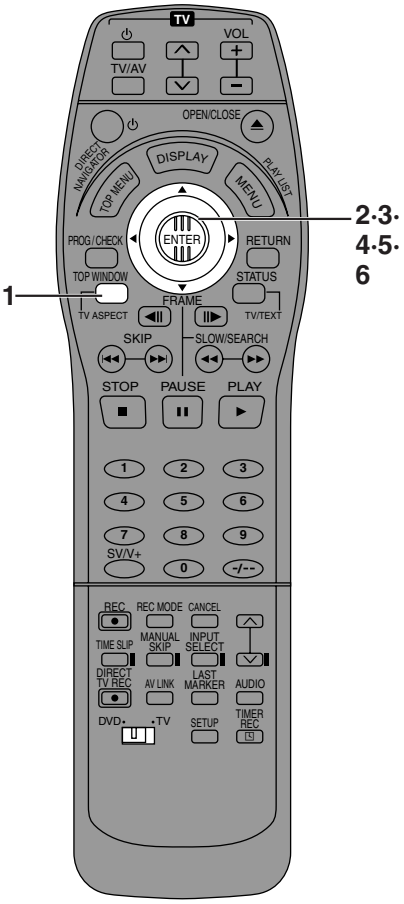
6 Use the joystick [◄] to select “Yes” and press [ENTER].



The padlock mark disappears.

■To stop partway through

Select “No” in step 6 and press [ENTER].
Or
Press [RETURN].



Erasing parts of a programme

RAM

The specified parts of the programme are erased completely when you use this procedure and cannot be retrieved. Check the programme carefully to ensure it isn't one you want to keep.

Preparation

- Switch [DVD, TV] to "DVD".
- Insert a disc you have recorded on.

1 While stopped
Press [TOP WINDOW].

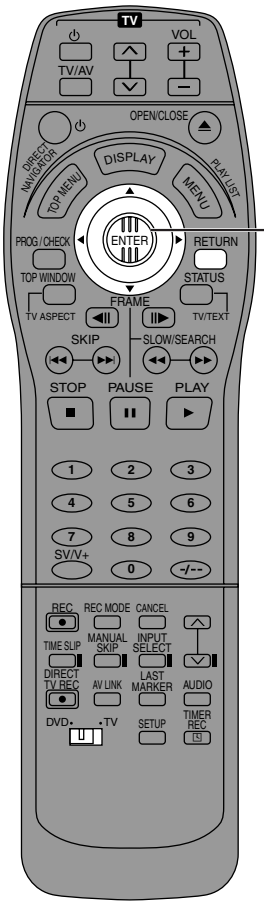
2 Use the joystick [▲, ▼, ◄, ►] to select "DIRECT NAVIGATOR" and press [ENTER].

3 Use the joystick [▲, ▼] to select the programme which contains the part you want to erase.

4 Use the joystick [►] so the submenu appears.

5 Use the joystick [▲, ▼] to select "Partial Erase" and press [ENTER].

6 Use search functions such as fast-forward and slow-motion to find the start point of the part you want to erase and press [ENTER].

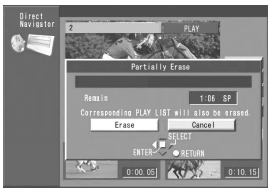


7 Use search functions such as fast-forward and slow-motion to find the end point of the part you want to erase and press [ENTER].

8 Use the joystick [▲, ▼] to select "Exit" and press [ENTER].

9 Use the joystick [◄] to select "Erase" and press [ENTER].

- Play lists created with the erased part are also erased.



■To stop partway through

Select "Cancel" in step 9 and press [ENTER].
Or
Press [RETURN].

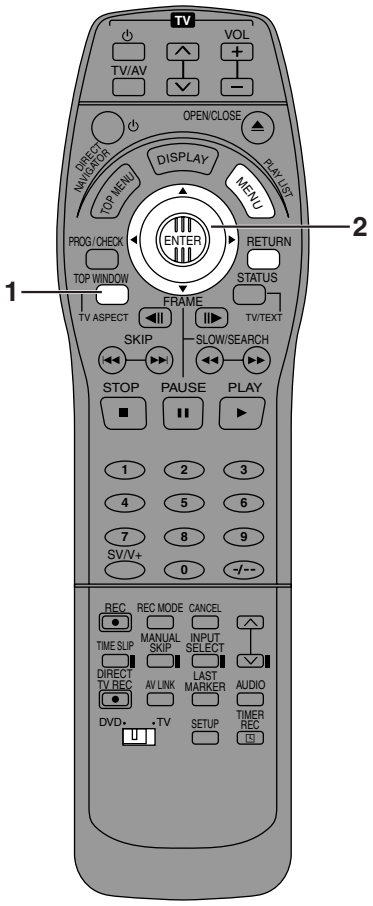
■To erase another part of the same programme

Select "Next" in step 8, then repeat steps 6, 7 and 9.

For your reference

- You can respecify the start or end points. The points you specify last are used.
- You cannot specify an end point before a start point or a start point after an end point.
- You may not be able to specify start and end points within 3 seconds of each other.
- You cannot specify start and end points if the picture recorded is stilled.
- The unit pauses play when the end of the programme is reached during this procedure.
- The disc's available recording time may not increase after erasing short parts of programmes.
- You cannot erase parts of protected programmes.
- Play lists created with the erased part are also erased.

Using play lists to edit programmes



Displaying play lists

RAM

Preparation

- Switch [DVD, TV] to "DVD".
- Insert a disc you have recorded on.

1 While stopped
Press [TOP WINDOW].

2 Use the joystick [▲, ▼, ◄, ►] to select "PLAY LIST" and press [ENTER].

The play list screen appears. Scenes are not displayed if you have not yet created a play list with the disc.

■To clear the play list screen

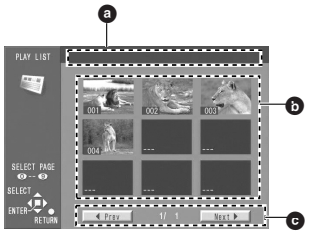
Press [MENU, PLAY LIST] or [RETURN].
The screen returns to the state it was in before you called up the play list.

■What you can do with the play list screen

- **Create play lists** (page 56)
- **Play play lists** (page 57)
- **Select a scene to play** (page 58)
- **Add, move, re-edit, and erase scenes** (pages 58, 59, 60)
- **Copy play lists** (page 61)
- **Erase play lists** (page 62)
- **Give play lists titles** (page 63)
- **Check a play list's contents** (page 63)

For your reference
You can also display the play list by pressing [MENU, PLAY LIST].

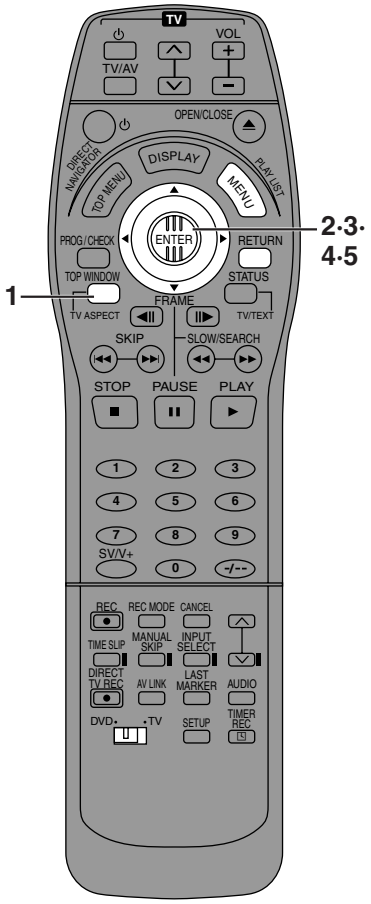
About the play list scene screen



a) **Play list information**
This shows the play list number, date of creation (month/date), total play time, and the number of scenes it contains and title (if entered).

b) **Scenes**
9 scenes can be shown on a page.

c) **Turning pages**
If there are more than 9 scenes, use the joystick [▲, ▼, ◄, ►] to select "◄ Back" or "Next ►" and press [ENTER] to move to the previous page or next page. You can also enter the three digits with the numeric buttons. (page 6)



Creating play lists

RAM

You can specify start and end points to create a scene, then specify the order in which these scenes are played. These scenes are not recorded separately so this doesn't use up much of the disc's capacity.

Preparation

- Switch [DVD, TV] to "DVD".
- Insert a disc you have recorded on.

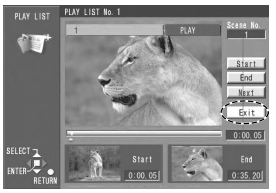
1 While stopped
Press [TOP WINDOW].

2 Use the joystick [▲, ▼, ◄, ►] to select "CREATE PLAY LIST" and press [ENTER].

3 Use search functions such as fast-forward and slow-motion to find the start point of the scene and press [ENTER].

4 Use search functions such as fast-forward and slow-motion to find the end point of the scene and press [ENTER].

5 Use the joystick [▲, ▼] to select "Exit" and press [ENTER].



■To stop partway through

Press [RETURN].

■To clear the play list screen

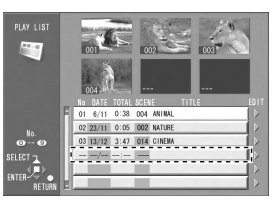
Press [MENU, PLAY LIST] or [RETURN].
The screen returns to the state it was in before you called up the play list.

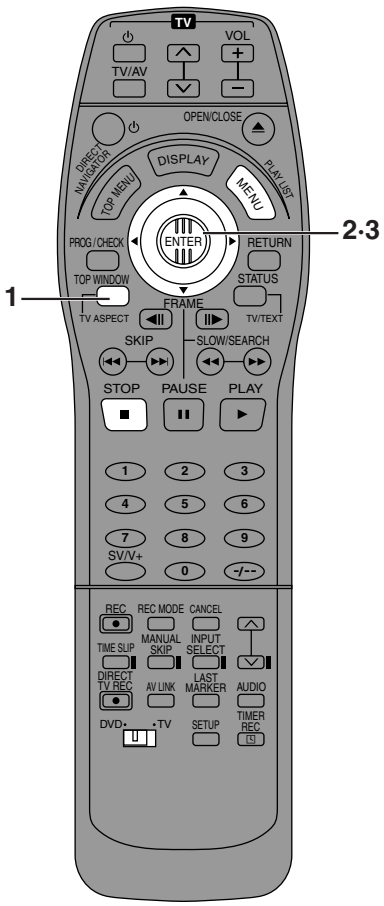
■To specify another scene

Select "Next" after step 4 and press [ENTER], then repeat steps 3 and 4.

For your reference

- One disc can have a maximum of 99 play lists and 999 scenes. These numbers may be reduced under some conditions.
- You can respecify the start or end points. The points you specify last are used.
- You cannot specify an end point before a start point or a start point after an end point.
- If you specify an end point but not a start point, the unit determines the beginning of the programme as the start point. Similarly, if you specify a start point but not an end point, the unit determines the end of the programme as the end point.
- You may not be able to specify start and end points if the material is still pictures recorded on other equipment.
- The unit pauses play when the end of the last programme on the disc is reached during this procedure.
- You cannot create or edit play lists if "Disc Protection" in "DISC INFORMATION" is "On" (page 42).
- You cannot create or edit play lists if the write protect tab on a cartridge disc is set to protect. Release this before operation (page 90).
- You can also display the CREATE PLAY LIST screen by selecting "– –" at the bottom of the play list.





Playing play lists

RAM

Preparation

- Switch [DVD, TV] to “DVD”.
- Insert a disc you created play lists on.

1 While stopped
Press [TOP WINDOW].

2 Use the joystick [▲, ▼, ◄, ►] to select “PLAY LIST” and press [ENTER].

3 Use the joystick [▲, ▼] to select the play list you want to play and press [ENTER].

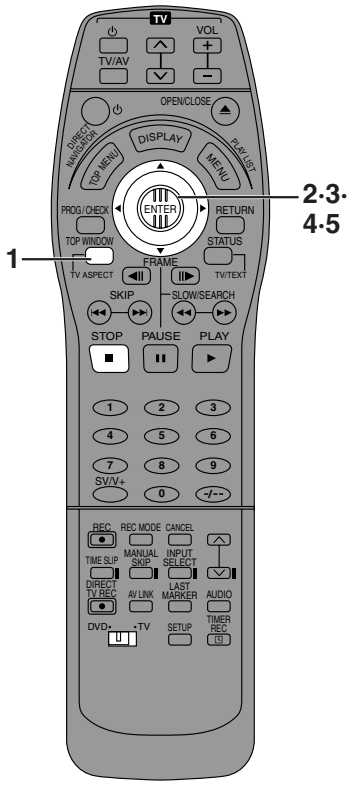
- The play list you select is played.
- You can display the play lists after the sixth one by moving the joystick [▼].

■To stop play list play

Press [■, STOP].
The play list appears.

For your reference

- You can also display the play list screen by pressing [MENU, PLAY LIST] at step 1.
- You can fast-forward, rewind, pause, and slow-motion while playing scenes just as you can during normal play.
- You can also select play lists from the list in step 3 by entering a 2-digit number with the numeric buttons (page 6) and pressing [ENTER].
  If you enter a number larger than the total number of play lists, the last play list is selected.



Playing play list scenes

RAM

Preparation

- Switch [DVD, TV] to "DVD".
- Insert a disc you created play lists on.

1 While stopped
Press [TOP WINDOW].

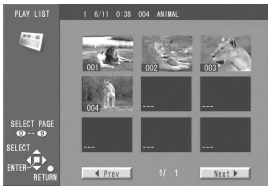
2 Use the joystick [▲, ▼, ◄, ►] to select "PLAY LIST" and press [ENTER].

3 Use the joystick [▲, ▼] to select the play list that contains the scene you want to play and use the joystick [►].

4 Use the joystick [▲, ▼] to select "Play Scenes" and press [ENTER].

5 Use the joystick [▲, ▼, ◄, ►] to select the scene you want to play and press [ENTER].

- The scene you select is played.



■To stop scene play

Press [■, STOP].
The scene list appears.

■To show scene 10 and later

In step 5, use the joystick [▲, ▼, ◄, ►] to select "Next ►" and press [ENTER].

For your reference

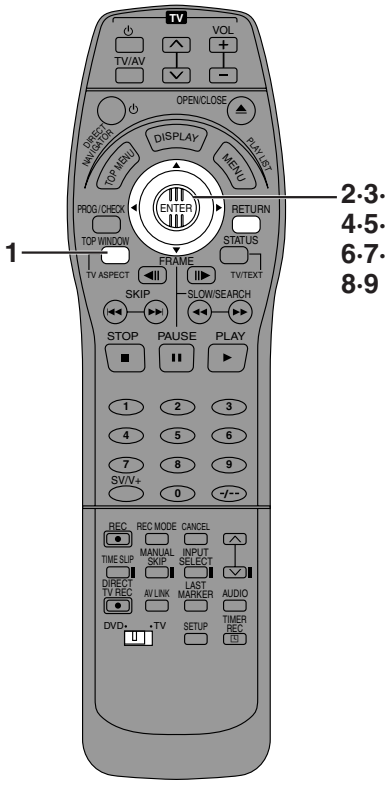
- You can fast-forward, rewind, pause, and slow-motion while playing scenes just as you can during normal play.
- You can also select a page of scenes in step 5 by entering a 3-digit number with the numeric buttons (page 6).

Adding scenes to a play list

RAM

Preparation

- Switch [DVD, TV] to "DVD".
- Insert a disc you created play lists on.



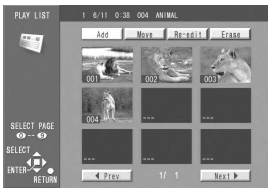
1 While stopped
Press [TOP WINDOW].

2 Use the joystick [▲, ▼, ◄, ►] to select "PLAY LIST" and press [ENTER].

3 Use the joystick [▲, ▼] to select the play list you want to edit and use the joystick [►].

4 Use the joystick [▲, ▼] to select "Edit Scenes" and press [ENTER].

5 Use the joystick [◄, ►] to select "Add" and press [ENTER].



6 Use the joystick [▲, ▼, ◄, ►] to select the scene after the position you want to add the scene and press [ENTER].

7 Use search functions such as fast-forward and slow-motion to find the start point of the scene and press [ENTER].

8 Use search functions such as fast-forward and slow-motion to find the end point of the scene and press [ENTER].

9 Use the joystick [▲, ▼] to select "Exit" and press [ENTER].

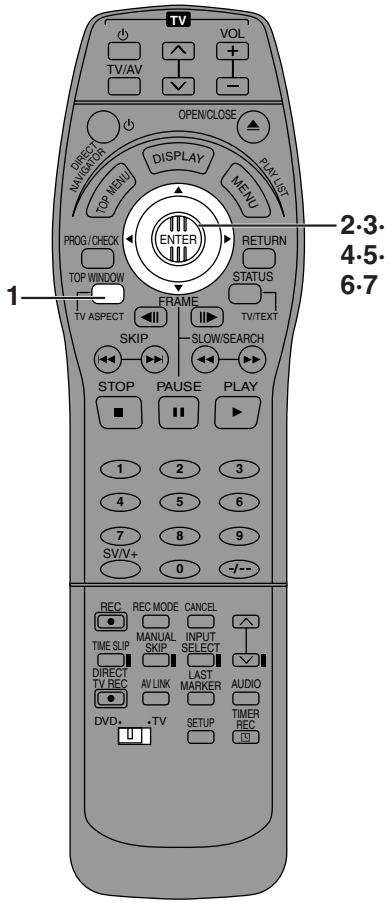
- The screen from step 5 reappears.

■To return to the previous screen

Press [RENTER].

■To add other scene

1) Use the joystick [▲, ▼] after step 8 to select "Next" and press [ENTER].
2) Repeat steps 7, and 8.



Moving a scene

RAM

Preparation

- Switch [DVD/TV] to “DVD”.
- Insert a disc you created play lists on.

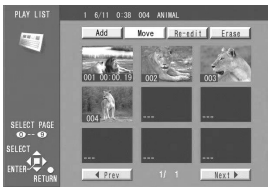
1 While stopped
Press [TOP WINDOW].

2 Use the joystick [▲, ▼, ◄, ►] to select “PLAY LIST” and press [ENTER].

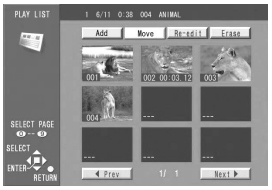
3 Use the joystick [▲, ▼] to select the play list you want to edit and press [►].

4 Use the joystick [▲, ▼] to select “Edit Scenes” and press [ENTER].

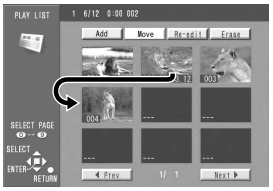
5 Use the joystick [◄, ►] to select “Move” and press [ENTER].



6 Use the joystick [▲, ▼, ◄, ►] to select the scene you want to move and press [ENTER].

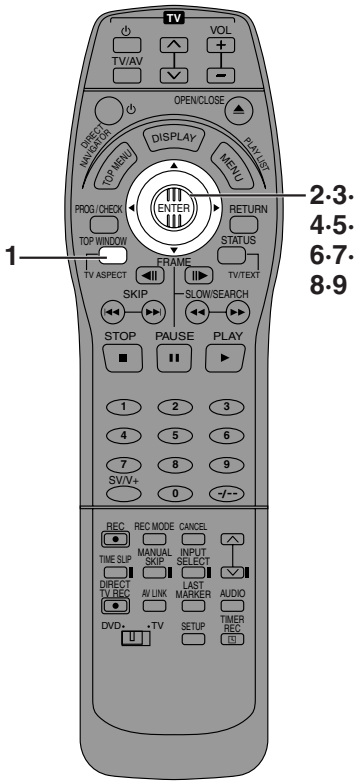


7 Use the joystick [▲, ▼, ◄, ►] to select the scene currently in the position to which you want to move the scene to and press [ENTER].
The scene you selected in step 6 moves to the position in front of the scene selected.



■To move another scene

Repeat steps 6 and 7.



To re-edit a play list scene

RAM

1 While stopped
Press [TOP WINDOW].
2 Use the joystick [▲, ▼, ◄, ►] to select "PLAY LIST" and press [ENTER].
3 Use the joystick [▲, ▼] to select the play list you want to edit and use the joystick [►].
4 Use the joystick [▲, ▼] to select "Edit Scenes" and press [ENTER].
5 Use the joystick [◄, ►] to select "Re-edit" and press [ENTER].

6 Use the joystick [▲, ▼, ◄, ►] to select the scene you want to re-edit and press [ENTER].

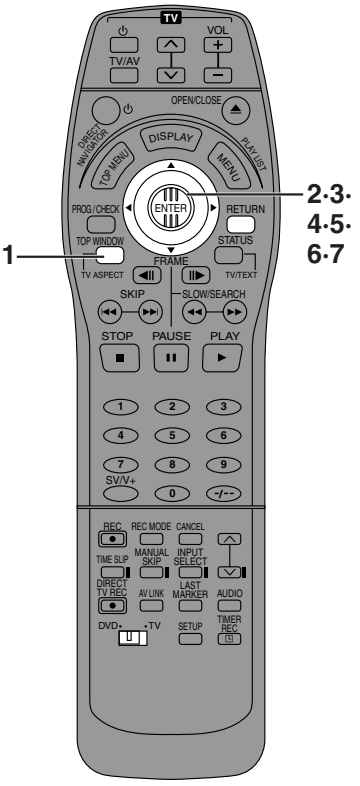
7 Use search function such as fast-forward and slow-motion to find the start point of the scene and press [ENTER].

8 Use search functions such as fast-forward and slow-motion to find the end point of the scene and press [ENTER].
9 Use the joystick [▲, ▼] to select "Exit" and press [ENTER].

■To re-edit another scene

(1) Use the joystick [▲, ▼] after step 8 to select "Next" or "Back" and press [ENTER] until you find the scene you want to re-edit.
(2) Repeat steps 6 to 8 to continue re-editing other scenes.

Note
You cannot specify an end point before a start point or a start point after an end point.

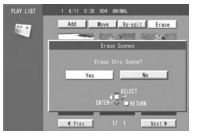


Erasing a scene from a play list

RAM

Preparation
- Switch [DVD, TV] to "DVD".
- Insert a disc you created play lists on.

1 While stopped
Press [TOP WINDOW].
2 Use the joystick [▲, ▼, ◄, ►] to select "PLAY LIST" and press [ENTER].
3 Use the joystick [▲, ▼] to select the play list you want to edit and use the joystick [►].
4 Use the joystick [▲, ▼] to select "Edit Scenes" and press [ENTER].
5 Use the joystick [◄, ►] to select "Erase" and press [ENTER].



6 Use the joystick [▲, ▼, ◄, ►] to select the scene you want to erase and press [ENTER].
7 Use the joystick [◄] to select "Yes" and press [ENTER].

The selected scene is erased from the play list.

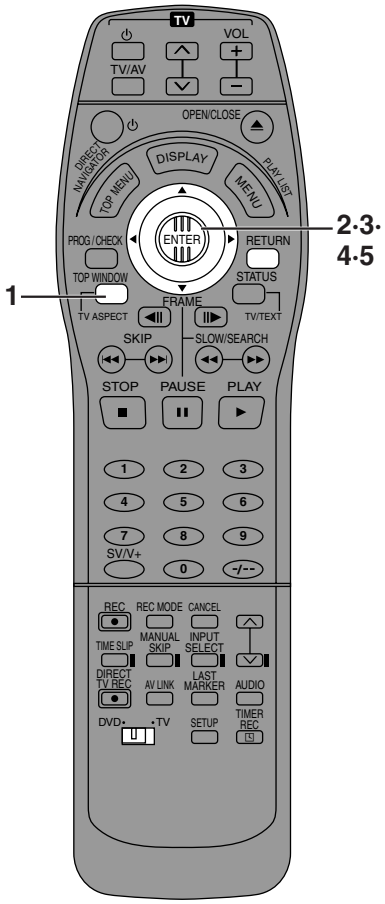
■To erase other scene

Repeat steps 6 and 7.

■To stop partway

Select "No" in step 7 and press [ENTER].
Or
Press [RETURN].

For your reference
The play list itself is erased if you erase all the scenes in it.



Copying play lists

RAM

Preparation

- Switch [DVD, TV] to “DVD”.
- Insert a disc you created play lists on.

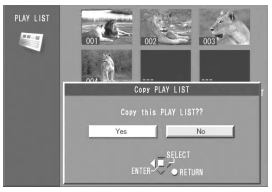
1 While stopped
Press [TOP WINDOW].

2 Use the joystick [▲, ▼, ◄, ►] to select “PLAY LIST” and press [ENTER].

3 Use the joystick [▲, ▼] to select the play list you want to copy and then use the joystick [►].

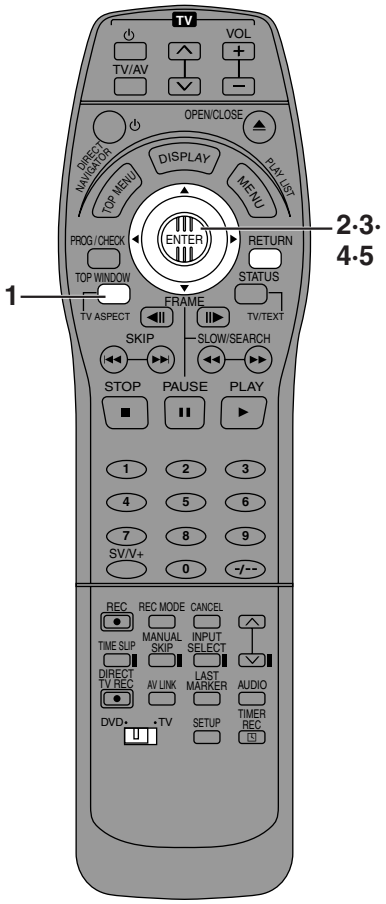
4 Use the joystick [▲, ▼] to select “PL Copy” and press [ENTER].

5 Use the joystick [◄] to select “Yes” and press [ENTER].
The copied play list appears at the bottom of the list.



■To stop partway

Select “No” in step 5 and press [ENTER].
Or
Press [RETURN].



Erasing a play list

RAM

Preparation

- Switch [DVD, TV] to “DVD”.
- Insert a disc you created play lists on.

1 While stopped
Press [TOP WINDOW].

2 Use the joystick [▲, ▼, ◄, ►] to select “PLAY LIST” and press [ENTER].

3 Use the joystick [▲, ▼] to select the play list you want to delete and use the joystick [►].

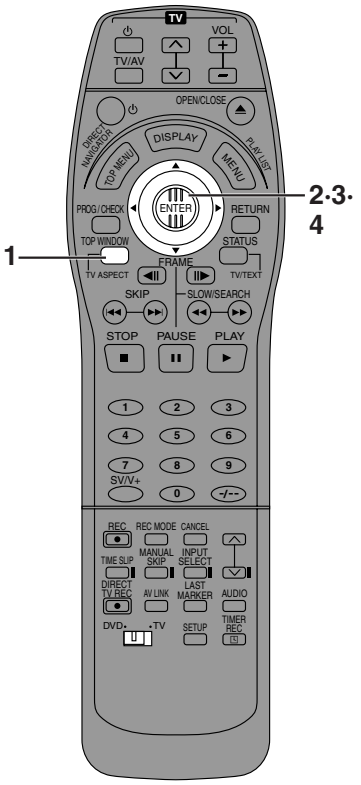
4 Use the joystick [▲, ▼] to select “PL Erase” and press [ENTER].

5 Use the joystick [◄] to select “Yes” and press [ENTER].

The play list is erased.

■To stop partway

Select “No” in step 5 and press [ENTER].
Or
Press [RETURN].



Titling play lists

RAM

Preparation

- Switch [DVD, TV] to “DVD”.
- Insert a disc you created play lists on.

1 While stopped
Press [TOP WINDOW].

2 Use the joystick [▲, ▼, ◄, ►] to select “PLAY LIST” and press [ENTER].

3 Use the joystick [▲, ▼] to select the play list you want to title and then move the joystick [►].

4 Use the joystick [▲, ▼] to select “Enter Title” and press [ENTER].

5 Enter the title.

- “Entering titles” (page 40)

For your reference

You can give play lists on DVD-RAM titles of up to 64 characters.

Checking play list’s contents

RAM

Preparation

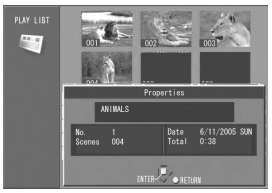
- Switch [DVD, TV] to “DVD”.
- Insert a disc you created play lists on.

1 While stopped
Press [TOP WINDOW].

2 Use the joystick [▲, ▼, ◄, ►] to select “PLAY LIST” and press [ENTER].

3 Use the joystick [▲, ▼] to select the play list whose contents you want to check and then move the joystick [►].

4 Use the joystick [▲, ▼] to select “Properties” and press [ENTER].

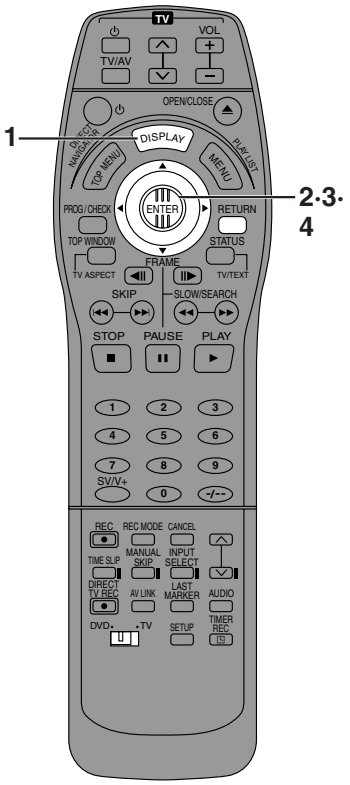


Using on-screen menu icons

RAM DVD-R DVD-V CD VCD

Remote control only

On-Screen Menu Icons are menus that contain information about the disc or unit. These menus allow you to perform operations by changing this information.



Common procedures

Preparation

Switch [DVD, TV] to "DVD".

1 Press [DISPLAY].

- Each time you press the button:

→Icons for disc information (ⓐ)
↓
Icons for unit information (ⓑ)
↓
└Original display (ⓒ)

2 Icons for unit information only

While the leftmost icon is highlighted

Use the joystick [▲, ▼] to select the menu.

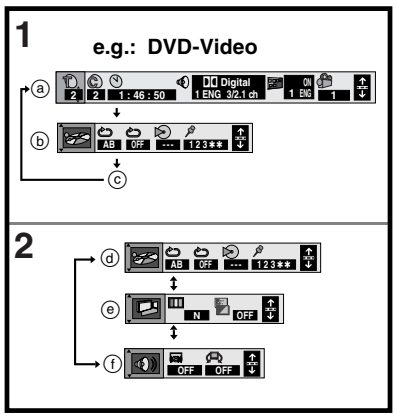
- Each time you move the joystick:

→Play menu (ⓓ)
↓
Video menu (ⓔ)
↓
└Audio menu (ⓕ)

3 Use the joystick [◄, ►] to select the item.

4 Use the joystick [▲, ▼] to select the setting.

- Some options require different operations. Follow the on-screen instructions and the instructions described later.



■To clear the icons

Press [RETURN] until the menus disappear.

■To change the position of the icons

1) Use the joystick [◄, ►] to select the rightmost icon.
2) Use the joystick [▲, ▼] to move the icons.

There are 5 positions to choose from.

For your reference

- The screens depend on the disc contents.
- Depending on the condition of the unit (playing, stopped, etc.) and the type of software you are playing, there are some items that you cannot select or change.

Icons for disc information

e.g. DVD-Video

Programme number RAM DVD-R
Select the number and press [ENTER].

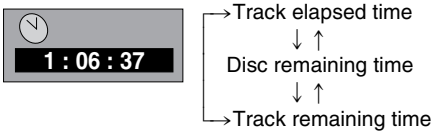
Play list number RAM
Select the number and press [ENTER].

Title number DVD-V
Track number CD VCD
Select the number and press [ENTER].

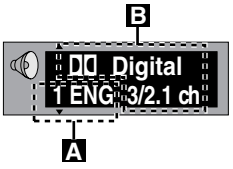
Chapter number DVD-V
Select the number and press [ENTER].

Elapsed play time RAM DVD-R DVD-V
Press the numeric buttons to select a time to play from.
For example, to start play from 1 hour, 6 minutes and 37 seconds.
Press [1]–[0]–[6]–[3]–[7], then [ENTER].

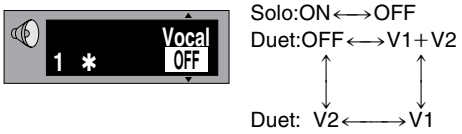
Time display CD VCD
Use the joystick [▲, ▼] to change the information displayed.



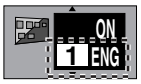
Soundtrack language DVD-V (See **A** at right.)
Change the number to select a soundtrack.
Audio attribute DVD-V (See **B** at right.)



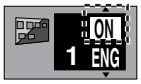
Karaoke vocals, on and off (Karaoke DVD-V only)



Subtitle number DVD-V (see **A** below.)
Change the number to select a subtitle language.



Subtitles on/off DVD-V
Turn the subtitles on or off.



Angle number DVD-V
Change the number to select an angle

Audio channel RAM VCD
Select the audio channel (page 22).

Menu play VCD (with playback control only)
Indicates whether menu play (playback control) is on or off. Cannot be changed here.

A Soundtrack/Subtitle language

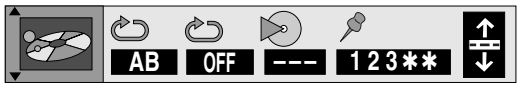
ENG: English	SVE: Swedish	CHI: Chinese
FRA: French	NOR: Norwegian	KOR: Korean
DEU: German	DAN: Danish	MAL: Malay
ITA: Italian	POR: Portuguese	VIE: Vietnamese
ESP: Spanish	RUS: Russian	THA: Thai
NLD: Dutch	JPN: Japanese	∗: Others

B Audio attributes
LPCM/Digital/DTS/MPEG: Signal type
k (kHz): Sampling frequency
b (bit): Number of bits
ch (channel): Number of channels

For your reference
- You can only select subtitles, soundtracks, and angles if they are recorded on the disc.
- Some discs allow changes to soundtracks, subtitles, and angles only by using the disc's menus.
- Soundtrack and subtitle languages can be set before play (page 75, Disc—Soundtrack and Subtitle).
- If the subtitles overlap closed captions recorded on discs, turn the subtitles off.

Icons for unit information

Play menu

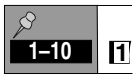


A-B repeat (page 67)
You can repeat a section between points A and B within a programme, title, or track.

Repeat play (page 67)
You can play a programme, play list, chapter, title, or track repeatedly.

Play mode CD VCD
Cannot be changed here.
---: Normal play
PGM: programme play (page 23)
RND: random play (page 24)

Marker
You can mark points on a disc to return to later (page 68).
RAM DVD-R



DVD-V VCD CD

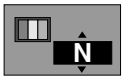
Audio menu

V.S.S. (page 67) RAM DVD-R DVD-V
Enjoy a surround-like effect if you are using two front speakers only. The effect is broadened and sound seems to come from virtual speakers on either side if the disc has surround signals recorded on it.
1←→2←→OFF

Dialog Enhancer DVD-V
(Dolby Digital, 3-channel or over only, including a center channel)
The volume of the center channel is raised to make dialog easier to hear.
ON←→OFF

Video menu

Digital picture mode
RAM DVD-R DVD-V VCD



To select the picture mode during play: [▲, ▼]
N: Normal mode
S: Soft mode
F: Fine mode
C: Cinema mode (mellows movie, enhances detail in dark scenes.)
U1/U2: User mode

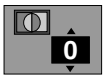
To change the user mode
1) Select User mode and move the joystick [►].
2) Use the joystick [▲, ▼] to select U1 or U2.
3) Use the joystick [◄, ►] to select the item you want to change.
4) Use the joystick [▲, ▼] to change the setting.

MPEG DNR
RAM DVD-R DVD-V VCD

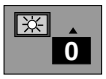
(Displayed when the picture mode is N, S, F or C.)
You can turn on and off the recommended settings for 3D NR, block NR, and mosquite NR.
ON←→OFF

■U1:Common picture adjustment

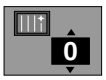
Contrast (−7 to +7)
Increases the contrast between light and dark parts of the picture.



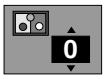
Brightness (0 to +15)
Brightens the picture.



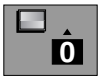
Sharpness (−6 to +6)
Adjusts the horizontal resolution of the picture.



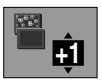
Colour (−7 to +7)
Adjust the shade of the picture's colour.



Gamma (0 to +15)
Increases the brightness of the center ranges to improve detail and contrast in dark scenes.



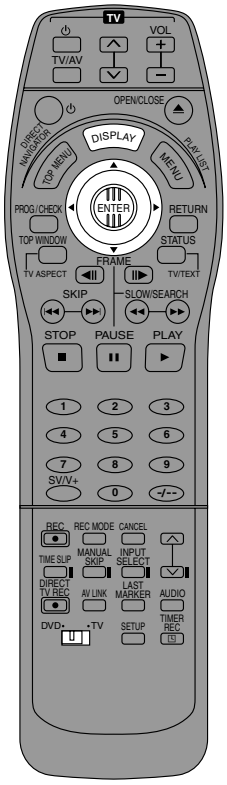
■U2:Reducing picture noise

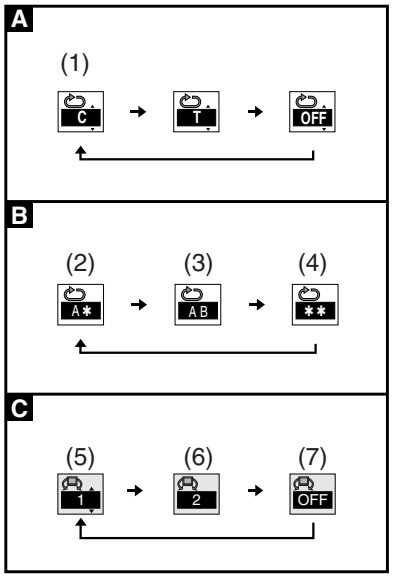


3D NR (0 to +4)
Reduces overall noise.

Block NR (0 to +3)
Smoothes block noise.

Mosquito NR (0 to +3)
Reduces the smudging that appears around contrasting sections of the picture.





(1) e.g. DVD-Video
(2) Specify point A
(3) Specify point B
(4) Normal play
(5) Natural effect
(6) Emphasized effect
(7) Off

Repeat play A

RAM DVD-R DVD-V CD VCD

Preparation

- Switch [DVD, TV] to "DVD".
- Press [DISPLAY] →[DISPLAY] to display the on-screen menu icons and use the joystick [►] to highlight the repeat play icon (pages 64 and 66).

During play

Use the joystick [▲, ▼].

The display changes as illustrated.

RAM DVD-R
Programme (PRG)→Entire disc (A)→OFF

RAM
While playing a play list
Play list (PL)→OFF

DVD-V
Chapter (C)→Title (T)→OFF

CD VCD
Track (T)→Entire disc (A)→OFF

If the Video CD has playback control

1) While stopped (the screen saver is on the television), press the numbered buttons to select a track (page 6).
2) Do the above operation.

■To repeat only your favorite tracks

CD VCD

(1) Programme the tracks you want (page 23).
(2) Do the above operation.

Note

- Repeat play may not work as desired with some discs.
- Repeat play does not work if the disc's elapsed play time is not shown on the unit's display.
- You cannot use repeat play to repeat an entire DVD-Video.

A-B repeat play B

RAM DVD-R DVD-V

You can repeat a section between points A and B within a programme, title, or chapter.

Preparation

- Switch [DVD, TV] to "DVD".
- Press [DISPLAY] →[DISPLAY] to display the on-screen menu icons and use the joystick [►] to highlight the A-B repeat icon (pages 64 and 66).

During play

Press [ENTER].

The display changes as illustrated.
A-B repeat starts when you specify point B.

Note

- A-B repeat does not work if the DVD's elapsed play time is not shown on the unit's display.
- The unit automatically determines the end of a programme/title as point B when the end of the programme/title is reached.
- Some subtitles recorded around point A or B may fail to appear.
- This does not work while playing a play list.

Enjoying virtual surround sound effects (V.S.S.) C

RAM DVD-R DVD-V

(Only with Dolby Digital with 2 or more channels)

Enjoy a surround-like effect if you are using two front speakers only. The effect is broadened and sound seems to come from virtual speakers on either side if the disc has surround signals recorded on it.

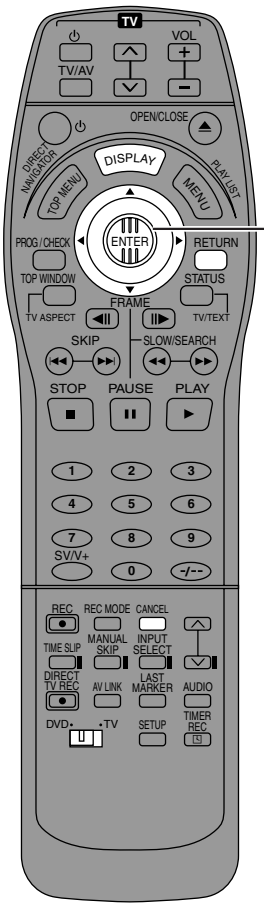
Preparation

- Switch [DVD, TV] to "DVD".
- Turn off the surround effects on the other equipment.
- Press [DISPLAY] →[DISPLAY] to display the on-screen menu icons and use the joystick [►] to highlight the V.S.S. icon (pages 64 and 66).

Use the joy stick [▲, ▼] to select the effect.

Note

- V.S.S. will not work, or will have less effect, with some discs, even if you select "1" or "2".
- Turn V.S.S. off if it causes distortion.



1·2·3·4

Marking places to play again—MARKER

RAM DVD-R DVD-V CD VCD

Preparation

- Switch [DVD, TV] to "DVD".
- Turn off the surround effects on the other equipment.
- Press [DISPLAY] →[DISPLAY] to display the on-screen menu icons and use the joystick [►] to highlight the marker icon (pages 64 and 66).

Marking Place

RAM DVD-R

You can mark up to 999 points on a disc to return to later. These marks are recorded directly onto DVD-RAM, but are cleared when you removed or finalized DVD-R.

DVD-V CD VCD

You can mark up to 5 points on a disc to return to later. All the markers are cleared when the disc tray is opened.

1 Press [ENTER].

2 Use the joystick [◄, ►] to select the next asterisk (✳).

3 Press [ENTER] at the point you want to mark.

To play from a marked position

Preparation

- Switch [DVD, TV] to "DVD".
- Press [DISPLAY] →[DISPLAY] to display the on-screen menu icons and use the joystick [►] to highlight the marker icon (pages 64 and 66)

1 Press [ENTER].

2 Use the joystick [◄, ►] to select a marker number.

3 Press [ENTER].

RAM DVD-R

When selecting markers 11 and above

1 Use the joystick [◄, ►] to highlight the marker pin icon.

2 Use the joystick [▲, ▼] to select "11–20".

- The group of 10 increases each time you move the joystick [▲].

3 Use the joystick [►] and press [ENTER].

4 Use the joystick [◄, ►] to select a marker number.

■To clear a marker

Use the joystick [◄, ►] to select a marker number and press [CANCEL].

■To clear the on-screen icons

Press [RETURN].

Note

RAM

- This feature doesn't work while using a play list.
- The markers are ordered by time. This means that the marker numbers can change when you add and erase markers.
- You cannot mark and clear points if you have write-protected the disc, either with the write protect tab (page 90) or with DISC INFORMATION (page 42).

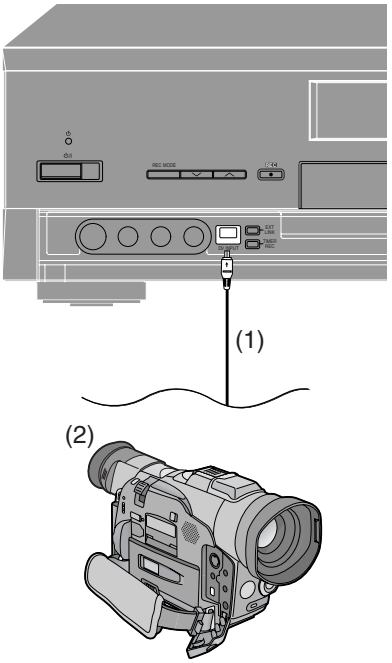
DVD-R

- The markers are ordered by time. This means that the marker numbers can change when you add and erase markers.

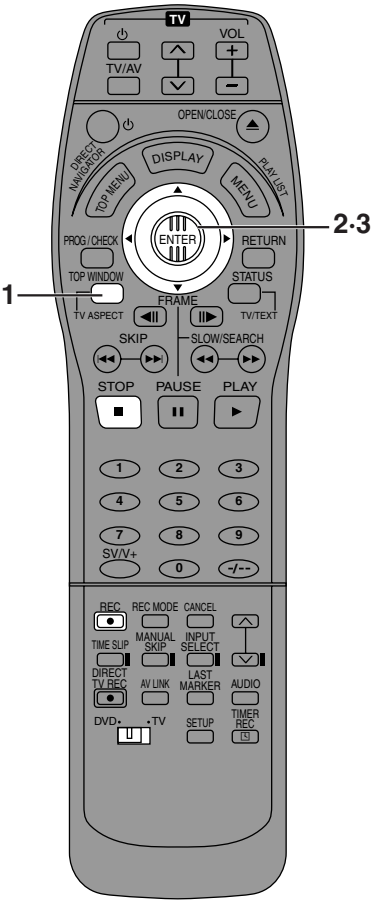
DVD-V CD VCD

- This feature only works if the elapsed playing time of the disc is shown on the unit's display.
- Some subtitles recorded around the marker may fail to appear.

Auto recording from Digital Video (DV) equipment



(1) DV Cable
(2) DV equipment



RAM

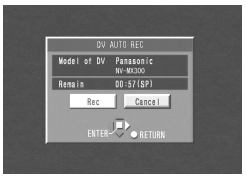
Preparation

- Before connecting any cables, first make sure that the power for both units is off. Then after connecting any cable, turn on the both units.
- Connect the DV equipment to the DV input terminal on the front panel.
- Pause play of the DV equipment at the point you want recording to start.
- Switch [DVD, TV] to "DVD".
- Insert a disc.
- Select the recording mode (page 26).

1 While stopped
Press [TOP WINDOW].

2 Use the joystick [▲, ▼, ◄, ►] to select "DV AUTO REC" and press [ENTER].

- The DV AUTO REC screen appears.
- The DV equipment pauses automatically if it was playing.



3 Use the joystick [◄, ►] to select "Rec" and press [ENTER].

- Recording starts.

■To stop recording manually

Press [■, STOP].

■When recording stops

The following screen appears.

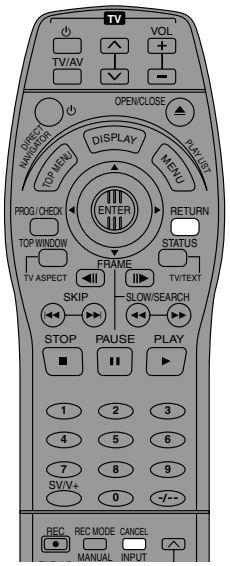
Press [ENTER] to finish DV auto recording.

- A programme and play list is added when DV auto recording finishes.

For your reference

- Do not operate the DV equipment during recording, as this will cause recording to stop. One recording session (from where recording is started to where it is stopped) is counted as one programme and a play list is automatically created. You can divide the recording into scenes by detecting the parts that [●REC] is pressed during recording of the DV equipment. The date of the first recording is used as the programme's title. (If "Hybrid VBR Resolution" in the SET UP menus is set to "Fixed", one session may be recorded as multiple cells.)
- The marker is automatically registered by detecting the parts that [●REC] is pressed during recording of the DV equipment.
- Make sure the DV equipment is paused before starting recording. If recording cannot start (the DV equipment is not connected correctly or a tape isn't loaded) or cannot continue, the screen shows a warning message and cancels recording. Check the equipment carefully before trying to record from it.
- The DV equipment name may not be shown correctly.
- You cannot record and play simultaneously.
- You cannot start recording until the images from the DV equipment appear on the television.
- The audio recorded is the audio selected at "Audio Mode for DV Input" (page 76).
- We recommend using NV-MX300.
- Recording may not be performed as desired if the time codes on the tape in the DV equipment are not successive.
- We recommend connecting one piece of DV equipment at a time.
- Even if you use device equipped with DV Terminals (such as i.LINK), you may not be able to perform DV auto recording in some cases.

Child Lock



The child lock deactivates all buttons on the unit and remote control. Use it to prevent other people from operating the unit.

To activate the child lock

Hold down [RETURN] and [CANCEL] simultaneously until “X HOLD” appears on the unit’s display.

- If you press a button while the child lock is on, “X HOLD” appears on the unit’s display and operation is impossible.

To cancel the child lock

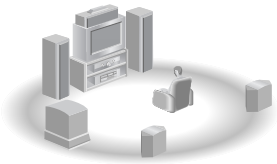
Hold down [RETURN] and [CANCEL] simultaneously until “X HOLD” disappears.

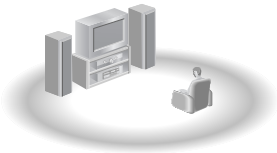
- If you cannot cancel the Child Lock, press [RETURN] and then perform the operation.

Upgrading your system

Enjoying more powerful sound

Refer to the relevant pages for details.

Enjoying 5.1-channel surround sound with Dolby Digital and DTS 	**Digital connection** Connect to an amplifier with built-in decoders.	71 **A**	**SET UP—Sound** ● Set “PCM Down Conversion” to “Yes”. ● Set “Dolby Digital” and “DTS” to suit the equipment..	78
			Change speaker settings on the amplifier.	—

To enjoy stereo or Dolby Pro Logic 	**Analogue connection** Connect to an analogue amplifier or system component.	71 **B**	**SET UP—Sound** ● Set “PCM Down Conversion” to “No”.	78
	Digital connection Connect to a digital amplifier or system component.	71 **A**	**SET UP—Sound** ● Set “PCM Down Conversion” to “Yes”. ● Set “Dolby Digital” to “PCM”. ● Set “DTS” to “Off”.	78

■Other uses

Record to digital recording equipment or cassette deck (**A** **B** page 71)
Record from an video cassette recorder (**E** page 73)

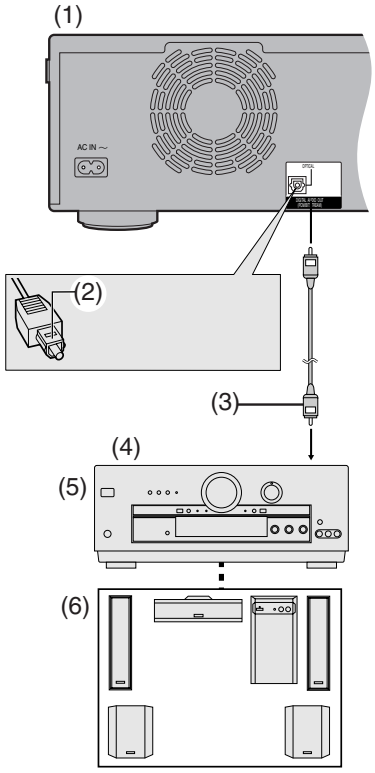
Use connection **B** to enjoy discs recorded with a sampling frequency of 96 kHz. Sound will not be output if you use connection **A** dand set “PCM Down Conversion” to “No” due to copy protection. (Convert the signal to 48 kHz to enjoy this type of audio.)

For your reference

- The equipment connections described are examples.
- Before connection, turn off all equipment and read the appropriate operating instructions.

Note

You can enjoy Dolby Digital in stereo with this unit alone.
(This unit does not have a DTS decoder.)



Connecting a digital amplifier or system component A

(1) Rear of this unit
(2) Insert fully, with this side facing up. (Do not bend when connecting.)
(3) Optical digital audio cable (not supplied)
(4) To optical digital input
(5) Amplifier
or
system component (with or without decoders) (not supplied)
(6) Speakers (not supplied)
●Example: Six speakers

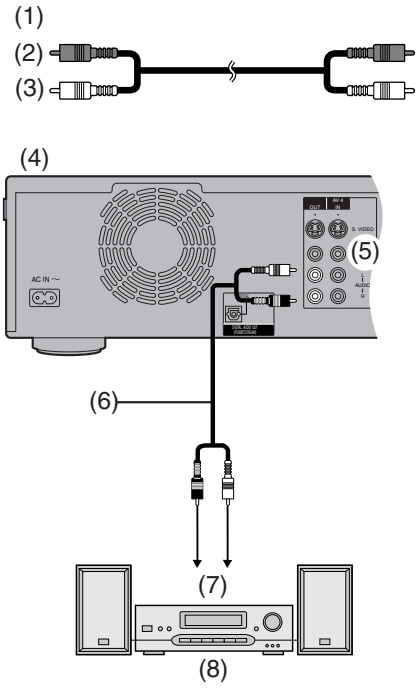
For your reference

- Change the settings in the “Sound” menus (page 76) to suit the digital equipment you have connected. If the equipment can decode Dolby Digital, set “Dolby Digital” to “Bitstream” (factory setting). If the equipment can decode DTS, set “DTS” to “Bitstream”.
- The DTS decoder must be compatible with the signals recorded on DVD.

You can record the digital signal directly onto digital recording equipment.
The signals on DVDs will be converted to 48 kHz/16 bit linear PCM.
When recording DVDs, ensure the following conditions are met.

- There is no copy guard recorded on the disc.
- The recording equipment can handle a sampling frequency of 48 kHz/16 bit.

If you want to use the synchro recording feature on your digital recording equipment and you use connection A or B to record from CDs or video CDs, first pause at the point you want to record from, activate the synchro feature, then restart play on the unit.



Connecting an analogue amplifier or system component B

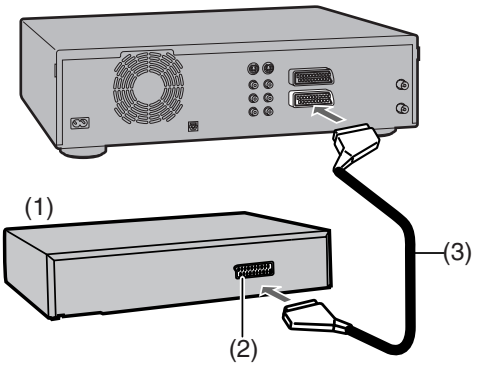
(1) Audio cable
(2) Red (R)
(3) White (L)
(4) Rear panel of this unit
(5) To AUDIO OUT (L/R)
(6) Audio cable (not supplied)
(7) Audio input (L/R)
(8) 2-channel analogue amplifier or system component
(not supplied)

■To enjoy Dolby Pro Logic (page 87)

You will also need to connect center and surround speakers in addition to the front speakers to enjoy surround sound. Read the instructions for the equipment for connection details. Turn V.S.S. off. Dolby Pro Logic will not function correctly if V.S.S. is on.

Connecting a Decoder C

Decoder here refers to the device used to decode scrambled broadcasts (Pay TV).



(1) Decoder (not supplied)
(2) 21-pin Scart socket
(3) 21-pin Scart cable (not supplied)

Connect a 21-pin Scart cable (not supplied) to the AV2 21-pin Scart socket on the unit and to the 21-pin Scart socket on the decoder.

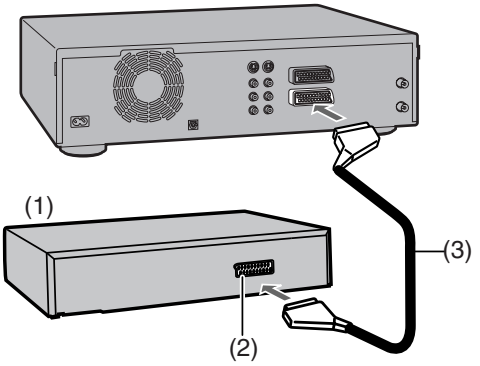
Connect the decoder's mains lead to an AC mains socket.

Set "AV2 Connection" to "DECODER". (page 77)

Note

[RGB] means separate Red/Green/Blue colour signals. If you connect a TV equipped with RGB input capability to the AV1 socket on this unit, and a decoder equipped with RGB output capability to the AV2 socket, RGB signal will pass through the unit to the TV.

Connecting a satellite receiver or digital receiver D



(1) Satellite receiver (not supplied)
(2) 21-pin Scart socket
(3) 21-pin Scart cable (not supplied)

Connect a 21-pin Scart cable (not supplied) to the AV2 21-pin Scart socket on the unit and to the 21-pin Scart socket on the satellite receiver.

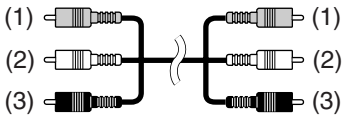
Connect the satellite receiver's mains lead to an AC mains socket.

Set "AV2 Connection" to "EXT", "Ext Link 1" or "Ext Link 2". (page 77)

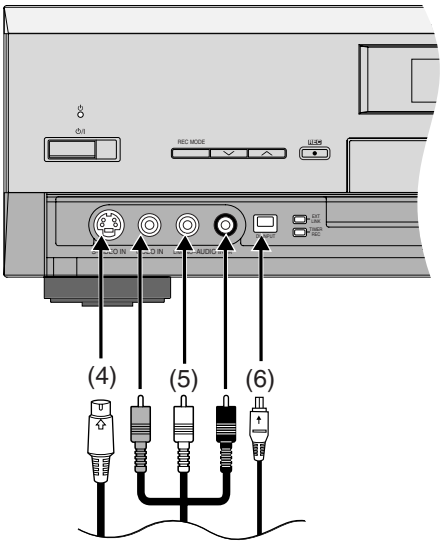
Connecting a video cassette recorder E

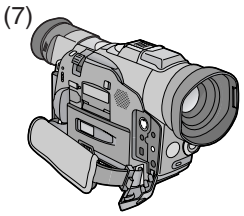
When connecting to the AV3/DV input terminals on the front of the unit

Audio/Video cable



(1) Yellow (VIDEO)
(2) White (L)
(3) Red (R)



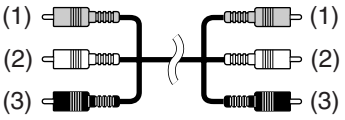


(4) S-Video cable(not supplied)
(5) Audio/Video cable(not supplied)
(6) 4-pin DV cable(not supplied)
(7) Other playback equipment
●Connect to the video and audio output terminals.

Note
If the audio output of the other equipment is monaural, connect to L/MONO. (Both left and right channels are recorded when connected through L/MONO.)

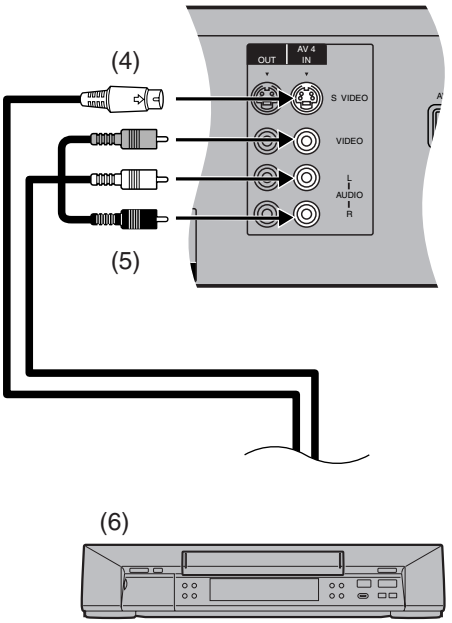
When connecting to the input terminals on the rear of the unit

Audio/Video cable



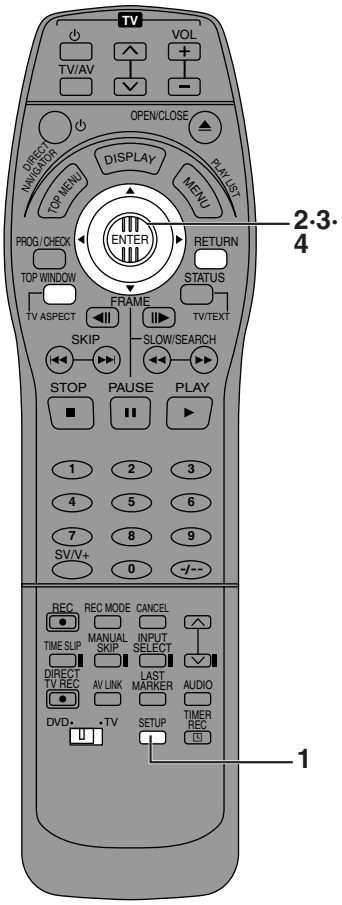
(1) Yellow (VIDEO)
(2) White (L)
(3) Red (R)

Rear panel of this unit



(4) S-Video cable(not supplied)
(5) Audio/Video cable(not supplied)
(6) Other playback equipment
●Connect to the video and audio output terminals.

Note
If audio output on the other equipment is monaural, use a stereo-monaural conversion cable (not supplied).



Common procedures

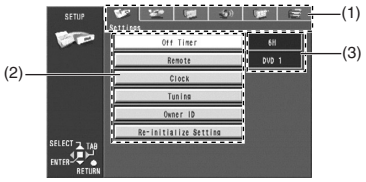
Refer to the summary of settings table on page 75 and use the following procedure to change the settings if necessary.

Preparation

- Switch [DVD, TV] to "DVD".

1 While stopped

Press [SET UP] to show the menus.



(1)Menus
The SET UP menu is made up of six menus—Settings, Disc, Picture, Sound, Display, and Connection. Select the menu's tab to display the items.

(2)Items
A list of items in the menu you selected.

(3)Options
This shows the current settings. The options are shown when you select an item.

2 Use the joystick [◄, ►] to select the menu's tab.

3 Use the joystick [▲, ▼] to select the item you want to change and press [ENTER]

4 Use the joystick [▲, ▼] to select the option and press [ENTER]

- Some options require different operations. Follow the on-screen instructions and the instructions described.

■To return to the previous screen

Press [RETURN]. Even if you have changed an option, the change is not accepted unless you press [ENTER]

■When you are finished

Press [SET UP].

For your reference

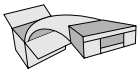
- The unit retains these settings in its memory until you change them, even if you turn it off.
- You can also display the SET UP menus by pressing [TOP WINDOW], using the joystick [▲, ▼, ◄, ►] to select "SET UP", and pressing [ENTER].

Summary of settings

This description shows the initial settings for this unit. See page 74 for details on menu operation.

- Underlined items are the factory presets.

Settings



Off Timer
Select how long the unit remains on when it is not being used.
[2 H] [6 H] [Off]

Remote
Change the remote control code so you can use other Panasonic DVD equipment at the same time.
[DVD 1] [DVD 2] [DVD 3]

Clock

- **Manual Clock Setting** (page 81)

You can adjust the clock.

- **Auto Clock Setting** (page 82)

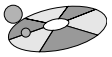
The unit adjusts the clock automatically.
Automatic: [On] [Off]

Tuning
[Manual] [Auto-Setup Restart] [Download] [Shipping Condition]

Owner ID
You can input the [PIN number], [Name], [House No.] and [Postcode] for the Owner ID.

Re-initialize Setting
The settings for "Picture", "Sound", and "Display" return to the factory settings.
[Yes] [No]

Disc DVD-V



Soundtrack
Choose the preferred audio language.
[English] [French] [German] [Italian] [Spanish] [Original] [Other ∗∗∗∗]

Subtitle
Choose the preferred subtitle language.
[Automatic] [English] [French] [German] [Italian] [Spanish] [Other ∗∗∗∗]

Menus
Choose the preferred language for disc menus.
[English] [French] [German] [Italian] [Spanish] [Other ∗∗∗∗]

Note

Original: The original language of each disc will be selected.

Other ∗∗∗∗: Input a code number with the numeric buttons. (See below)

Automatic: If the language selected for "Soundtrack" is not available, subtitles of that language will automatically appear if available on that disc.

- Some discs are designed to start in a certain language despite any changes you make here.

Ratings (page 78)
Set a ratings level to limit DVD play.

Setting ratings (When level 8 is selected)
[8 No Limit]: All DVD-Video can be played.
[1] to [7]: Prohibits play of DVD-Video with corresponding ratings recorded on them.
[0 Lock All]: Prohibits play of all DVD-Video.

Changing ratings (When level 0–7 is selected)
[Unlock Recorder] [Change Level]
[Change Password] [Temporary Unlock]

Language code list

Abkhazian:	6566	Chinese:	9072	Hausa:	7265	Lithuanian:	7684	Romanian:	8279	Telugu:	8469
Afar:	6565	Corsican:	6779	Hebrew:	7387	Macedonian:	7775	Russian:	8285	Thai:	8472
Afrikaans:	6570	Croatian:	7282	Hindi:	7273	Malagasy:	7771	Samoan:	8377	Tibetan:	6679
Albanian:	8381	Czech:	6783	Hungarian:	7285	Malay:	7783	Sanskrit:	8365	Tigrinya:	8473
Ameharic:	6577	Danish:	6865	Icelandic:	7383	Malayalam:	7776	Scots Gaelic:	7168	Tonga:	8479
Arabic:	6582	Dutch:	7876	Indonesian:	7378	Maltese:	7784	Serbian:	8382	Turkish:	8482
Armenian:	7289	English:	6978	Interlingua:	7365	Maori:	7773	Serbo-Croatian:	8372	Turkmen:	8475
Assamese:	6583	Esperanto:	6979	Irish:	7165	Marathi:	7782	Shona:	8378	Twi:	8487
Aymara:	6588	Estonian:	6984	Italian:	7384	Moldavian:	7779	Sindhi:	8368	Ukrainian:	8575
Azerbaijani:	6590	Faroese:	7079	Japanese:	7465	Mongolian:	7778	Singhalese:	8373	Urdu:	8582
Bashkir:	6665	Fiji:	7074	Javanese:	7487	Nauru:	7865	Slovak:	8375	Uzbek:	8590
Basque:	6985	Finnish:	7073	Kannada:	7578	Nepali:	7869	Slovenian:	8376	Vietnamese:	8673
Bengali; Bangla:	6678	French:	7082	Kashmiri:	7583	Norwegian:	7879	Somali:	8379	Volapük:	8679
Bhutani:	6890	Frisian:	7089	Kazakh:	7575	Oriya:	7982	Spanish:	6983	Welsh:	6789
Bihari:	6672	Galician:	7176	Kirghiz:	7589	Pashto, Pushto:	8083	Sundanese:	8385	Wolof:	8779
Breton:	6682	Georgian:	7565	Korean:	7579	Persian:	7065	Swahili:	8387	Xhosa:	8872
Bulgarian:	6671	German:	6869	Kurdish:	7585	Polish:	8076	Swedish:	8386	Yiddish:	7473
Burmese:	7789	Greek:	6976	Laotian:	7679	Portuguese:	8084	Tagalog:	8476	Yoruba:	8979
Byelorussian:	6669	Greenlandic:	7576	Latin:	7665	Punjabi:	8065	Tajik:	8471	Zulu:	9085
Cambodian:	7577	Guarani:	7178	Latvian, Lettish:	7686	Quechua:	8185	Tamil:	8465		
Catalan:	6765	Gujarati:	7185	Lingala:	7678	Rhaeto-Romance:	8277	Tatar:	8484		

Picture

Hybrid VBR Resolution
Switch between automatic and fixed hybrid VBR resolution when recording.
[Automatic] [Fixed]

Note

Automatic: The unit automatically switches compression rates during recording. The unit reduces block noise, which occurs during MPEG compression, by selecting the optimum rate.

Fixed: The compression rate is fixed during recording. This ensures the compression rate is not reduced.

Still Mode
Select the type of picture shown when you pause play.
[Automatic] [Field] [Frame]

Note

Field: Less blurred field stills are shown. Select if jittering occurs when "Automatic" is selected.

Frame: Sharper frame stills are shown. Select if small text or fine patterns cannot be seen clearly when "Automatic" is selected.

Seamless Play
Turn seamless play on or off on discs with play lists.
[On] [Off]

Note

On: The scenes in play lists created with this unit are played seamlessly. This may cause shifting of the points where scenes change. Some play lists cannot be played seamlessly.

Off: The points where scenes in play lists are played accurately, but this may cause the picture to freeze for a moment when scenes change.

Sound

Sound During Search RAM DVD-R DVD-V VCD
Choose whether to have sound during search.
[On] [Off]

Dynamic Range Compression DVD-V (Dolby Digital only)
Change the dynamic range for late night viewing.
[On] [Off]

Audio Mode for DV Input (page 38)
[Stereo 1] [Stereo 2] [Mix]

Bilingual Selection for DVD-R (page 38)
Select whether to record the main or secondary audio type to DVD-R.
[M1] [M2]

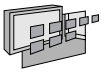
PCM Down Conversion (page 78)
Choose whether to convert 96 kHz LPCM signals to 48 kHz/16 bit.
[Yes] [No]

Dolby Digital (page 78)
Choose whether to output Dolby Digital bitstream signals for decoding on other equipment or to convert them to PCM signals for 2-channel output.
[Bitstream] [PCM]

DTS (page 78)
Choose whether to output DTS bitstream signals for decoding on other equipment or to not output signals at all.
[Bitstream] [Off]

MPEG (page 78)
Choose whether to output MPEG bitstream signals for decoding on other equipment or to convert them to PCM signals for 2-channel output.
[Bitstream] [PCM]

Display



On-Screen Messages
Choose whether to show on-screen messages automatically or not.
[Automatic] [Off]
Grey Background
Select whether to show the grey background, normally shown when television reception is poor.
[On] [Off]
Channel Guide
[On] [Off]
Note
ON:
The Channel Guide will appear for a few seconds each time the channel is changed with [∨, ∧].
OFF:
The Channel Guide will not appear.

FL Display
Changes the brightness of the unit's display.
[Bright] [Dim During Play] [Dim]

Note
Dim during play:
- The display dims during play of discs with video recorded. (The TIME SLIP indicator is off while the display is dimmed.)

Connection

TV Aspect (page 16)
Choose the setting to suit your television and preference.
[4:3] [16:9]
AV1 Output
[Video] [S-Video] [RGB] (page 72)
NTSC Signal Output
[PAL60] [NTSC]
AV2 Connection
[NORMAL] [DECODER] [Ext Link1] [Ext Link2]
Note
NORMAL:
When the VCR or a satellite receiver is connected.
DECODER:
When a decoder is connected.
Ext Link1:
When a digital receiver which transmits a special control signal recordings via the 21-pin Scart cable, for example the F.U.N. receiver (TU-DSF30/S3) is connected for the linked timer recordings.
Ext Link2:
When an external equipment with a timer function is connected for the linked timer recordings.

AV2 Input
[Video] [S-Video]

Input signal-TV System
[PAL] [NTSC]

Note
PAL:
Select to record television programmes and PAL input from other equipment.
NTSC:
Select to record NTSC input from other equipment. Television programmes cannot be recorded properly.

4:3 TV Settings for DVD-Video
Select how video from DVD-Video is shown on a 4:3 standard aspect television.
[Pan&Scan] [Letterbox]

Note
Pan & Scan: Video recorded for a widescreen is played with the sides cut off if the pan & scan was specified by the producer of the disc. 16:9 software prohibited from being shown in the pan and scan style will appear in the letterbox style (with black bands above and below the picture) despite the setting here.
Letterbox: Video recorded for a widescreen is played in the letterbox style.

4:3 TV Settings for DVD-RAM
Select how video from DVD-RAM is shown on a 4:3 standard aspect television.
[4:3] [Pan&Scan] [Letterbox]

Note
4:3: Programmes played as recorded.
Pan & Scan: Video recorded for a widescreen is played with the sides cut off if the pan & scan format is specified at the time of recording.
Letterbox: Video recorded for a widescreen is played in the letterbox style.

Entering a password

You can limit play of DVDs unsuitable for some audiences, children, for example. Play and changes to the settings are not possible unless you enter a password.

When setting ratings

The password screen is shown when you select levels 0 to 7.

1) Input a 4-digit password with the numeric buttons.
   - If you enter a wrong number, press [CANCEL] to erase it before you press [ENTER].

   Do not forget your password.
2) Press [ENTER].
3) Press [ENTER].

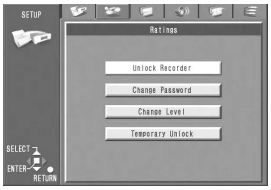
The password is entered and the unit is locked.

Now, when you insert a DVD-Video that exceeds the ratings limit you set, a message appears on the television.
Follow the on-screen instructions.

When changing ratings

The password screen is shown when you select "Ratings".

1) Input a 4-digit password with the numeric buttons and press [ENTER].



   Unlock Recorder: To unlock the unit and return the rating to 8
   Change Password: To change your password
   Change Level: To change the rating level
   Temporary Unlock: To temporarily unlock the unit (the unit locks again if you switch it to standby or open the disc tray)
2) Select the item with the joystick [▲, ▼] and press [ENTER].
   Actual screens depend on the operation. Follow the on-screen instructions.

Digital output

Change these settings when you have connected equipment through this unit's OPTICAL DIGITAL AUDIO OUT terminal.

PCM Down Conversion

No (factory setting)**:**
When you have used audio cables to connect the unit to other equipment (analogue connection **B** page 71).
Yes:
When you have used an optical digital cable to connect the unit to other equipment (digital connection **A** page 71). Output is limited to 48 kHz/16 bit.

Output of audio with a sampling frequency of 96 kHz
Audio is output as follows in accordance with the connections and settings you make.

Setting	Connection	
	A (digital)	**B (analogue)**
No	No output*1	Output as 96 kHz
Yes	Converted and output as 48 kHz/16 bit	Converted and output as 48 kHz

*1 Audio is output at 96 kHz if the DVD is unprotected, but the connected equipment must be able to handle such signals in order to play them.

Dolby Digital

Bitstream (Factory preset):
When you have connected a unit with a built-in Dolby Digital decoder.
PCM:
When you have connected a unit that doesn't have a built-in Dolby Digital decoder.*2

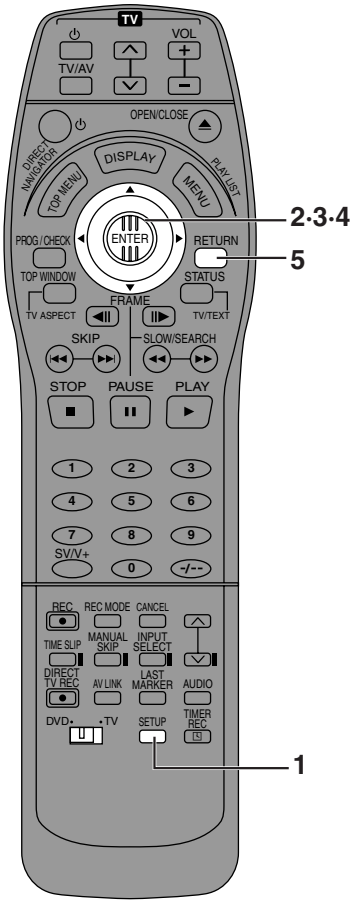
DTS

Off (Factory preset):
When you have connected a unit that doesn't have a built-in DTS decoder.*2
Bitstream:
When you have connected a unit with a built-in DTS decoder.

MPEG

Bitstream:
When you have connected a unit with a built-in MPEG decoder.
PCM (Factory preset):
When you have connected a unit that doesn't have a built-in MPEG decoder.*2

*2 Set "Dolby Digital" to "PCM", "DTS" to "Off" and "MPEG" to "PCM" if the other equipment doesn't have decoders. Incorrect settings can cause noise to be output which can be harmful to your ears and speakers, and audio will not be recorded properly to digital recording equipment.



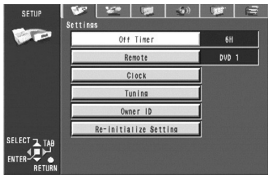
Off Timer Setting

Preparation
Switch [DVD, TV] to "DVD".

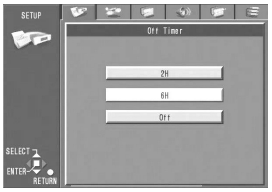
1 Press [SET UP].
- The SET UP screen appears.

2 Use the joystick [◄, ►] to select "Settings" tab.

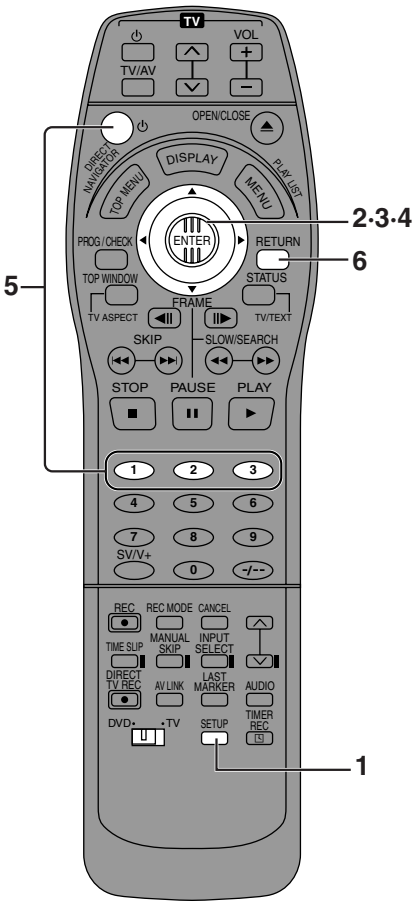
3 Use the joystick [▲, ▼] to select "Off Timer" and press [ENTER].



4 Use the joystick [▲, ▼] to select "2H", "6H" or "Off" and press [ENTER].
- 2H:
  The unit's power is automatically turned off if no operation has been performed for about 2 hours or more.
- 6H:
  The unit's power is automatically turned off if no operation has been performed for about 6 hours or more.
- Off (factory setting):
  The automatic power-off function is cancelled.



5 Press [RETURN].



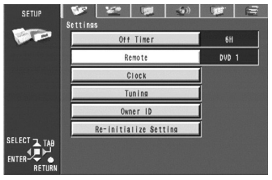
Remote Setting

Preparation
Switch [DVD, TV] to "DVD".

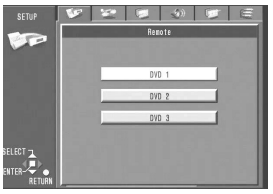
1 Press [SET UP].
- The SET UP screen appears.

2 Use the joystick [◄, ►] to select "Settings" tab.

3 Use the joystick [▲, ▼] to select "Remote" and press [ENTER].

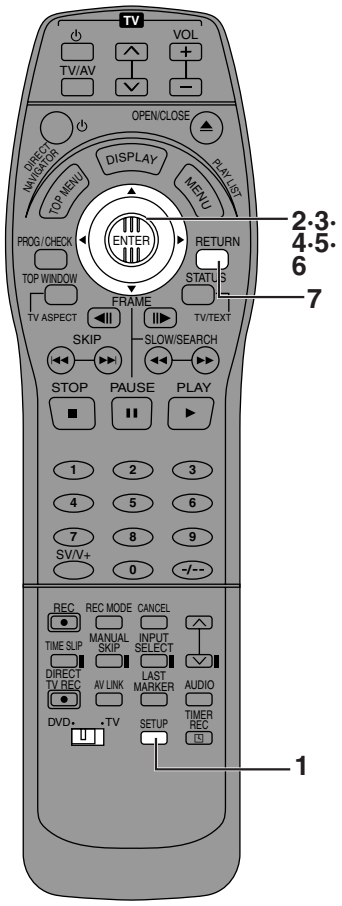


4 Use the joystick [▲, ▼] to select "DVD 1", "DVD 2" or "DVD 3" and press [ENTER].
- DVD 1:
  Select this setting on both the unit and the remote control for normal use with one unit.
- DVD 2/DVD 3:
  Select this setting on both the unit and the remote control when using this unit and another Panasonic unit in the same place. This ensures that you can operate both units independently with their respective remote control.
  It also allows you to operate both units with a single remote control, simply by changing the remote control mode on the remote control.



5 To change the remote control mode on the remote control itself, press [⏻] and the numeric buttons corresponding to the code you want to set, [1], [2], or [3], at the same time.

6 Press [RETURN].



Clock Settings

Usually, the units Auto Setup or Download function automatically adjusts the clock to correct time.
Under some reception conditions, however, the unit cannot set the clock automatically.
In this case, follow the operation steps below to manually set the clock.

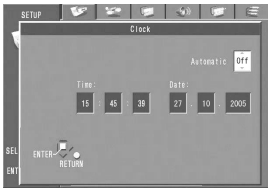
Manual Clock Setting

Preparation
Switch [DVD, TV] to "DVD".

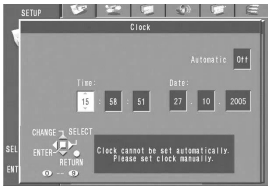
1 Press [SET UP].
- The SET UP screen appears.

2 Use the joystick [◄, ►] to select "Settings" tab.

3 Use the joystick [▲, ▼] to select "Clock" and press [ENTER].



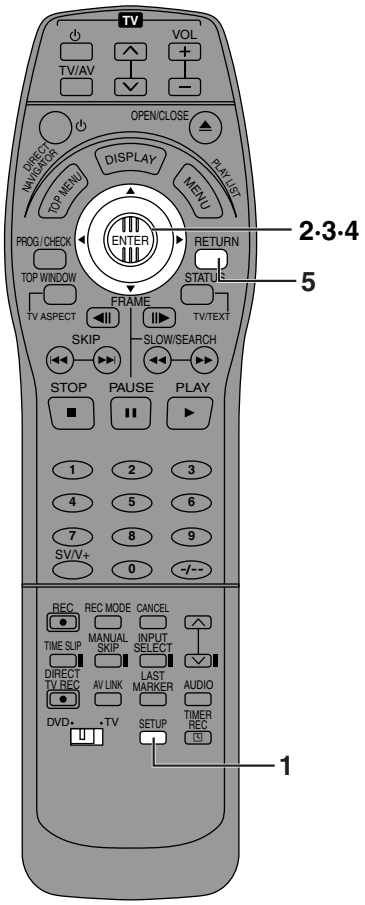
4 Use the joystick [▲, ▼] to select "Off" of "Automatic" and press [ENTER].



5 Use the joystick [◄, ►] to select the item you want to change.
- The items change as follows:
  Hour→Minute→Second→Day→Month→Year

6 Use the joystick [▲, ▼] to change the setting and press [ENTER].
- You can also use the numeric buttons for setting.

7 Press [RETURN].



Auto Clock Setting

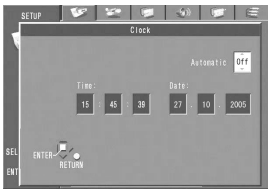
If a TV station transmits a signal for time setting, performing the operation steps below activates the Automatic time corection function and time is corrected automatically.

Preparation
Switch [DVD, TV] to "DVD".

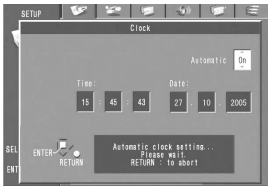
1 Press [SET UP].
- The SET UP screen appears.

2 Use the joystick [◄, ►] to select "Settings" tab.

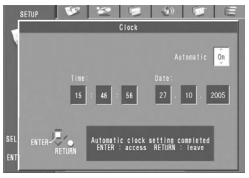
3 Use the joystick [▲, ▼] to select "Clock" and press [ENTER].



4 Use the joystick [▲, ▼] to select "On" of "Automatic" and press [ENTER].
- Auto clock setting starts.
- Under adverse reception conditions, etc., the automatic time correction function may not work. In this case, the indication for "Automatic" is automatically reset to "Off". If the reception conditions improve later on, it may be possible to activate this function.



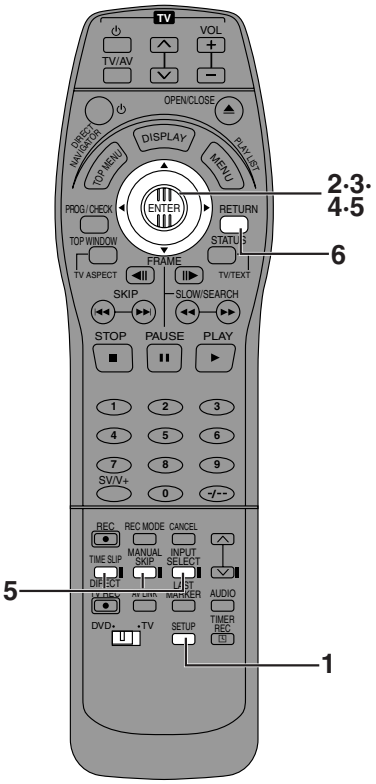
- The following screen appears when setting is complete.



5 Press [RETURN].

Note
- If "Automatic" is set to "On" when you open the Clock screen, do not set it to "Off", otherwise, the automatic time correcting function is deactivated.
- In case of a power failure, an automatic back-up system automatically maintains the operation of the clock for approximate 120 minutes.
- When "Automatic" on the Clock setting menu is set to "On", the automatic time correction function checks and if necessary adjusts the time several times every day.

■To stop auto clock setting
Press [RETURN].



Channel Settings

Preparation
Switch [DVD, TV] to "DVD".

Selecting the manual tuning

1 Press [SET UP].
- The SET UP screen appears.

2 Use the joystick [◄, ►] to select "Settings" tab.

3 Use the joystick [▲, ▼] to select "Tuning" and press [ENTER].

4 Use the joystick [▲, ▼] to select "Manual" and press [ENTER].

5 Use the joystick [▲, ▼] to select the TV station that you want to tune and press [ENTER].
- The TUNING BOX screen appears.

Handling the TUNING BOX screen

Use the joystick [▲, ▼, ◄, ►] to select the desired field and press [ENTER].

Pos:
To change the order in which the TV stations are assigned to the programme positions.
Press the numeric buttons to enter the number of the desired programme position.

Name:
To enter or change the name of a TV station.
Use the joystick [▲, ▼, ◄, ►] to enter station name and press [ENTER].
- If the station name needs a blank space, select the blank between [Z] and [✳].

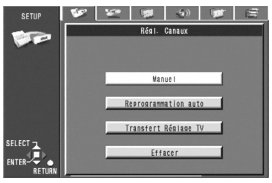
Channel:
To enter newly available TV stations or change the channel number of an already tuned TV station.
Press the numeric buttons to enter the channel number of the desired TV station.
- Wait a few moments until the desired TV station has been tuned.

Nicam:
To select the type of sound to be recorded.
Use the joystick [▲, ▼] to select "Auto".
- Select "Off" if you want to record the normal (mono) sound during a stereo, bilingual or NICAM broadcast, or if the stereo sound is distorted due to inferior reception conditions.

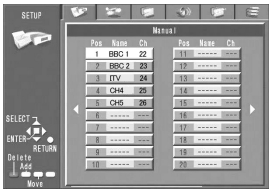
Title Page: (For the United Kingdom)
To select the title extraction from TV guide from TV guide of broadcaster.
Use the joystick [▲, ▼] to select the number between 100 and 899.

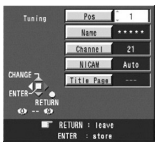
6 Press [RETURN].

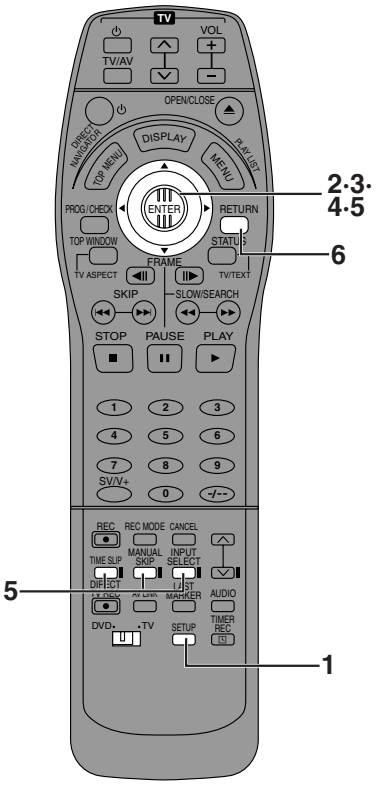
4



5







Adding, deleting, and moving channels

Use this function if:

- Channels were not set correctly using automatic tuning.
- A channel that should have been set wasn't.
- A channel's reception is poor and you want to delete it.

Preparation

Switch [DVD, TV] to "DVD".

1 Press [SET UP].

- The SET UP screen appears.

2 Use the joystick [◄, ►] to select "Settings" tab.

3 Use the joystick [▲, ▼] to select "Tuning" and press [ENTER].

4 Use the joystick [▲, ▼] to select "Manual" and press [ENTER].

5 Use the joystick [▲, ▼, ◄, ►] to select the desired TV station and use the colour buttons to select "Delete", "Add", "Move".

Follow the operations below.

To delete a programme position "Delete":
Press the [TIME SLIP] (red).

To insert a blank programme position "Add":
Press the [MANUAL SKIP] (green).

To move a TV station to another programme position "Move":
Press the [INPUT SELECT] (yellow), and then use the joystick [▲, ▼] to select the new programme position to which you want to assign the TV station.

6 Press [RETURN].

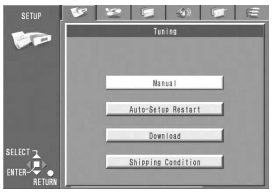
Note:

- Setting can take up to 3 minutes approximately.
- If downloading of the setup data has been performed, only the instruction indication "Delete" appears.

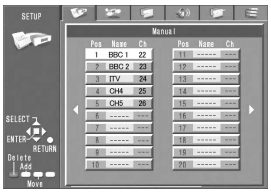
Hint:

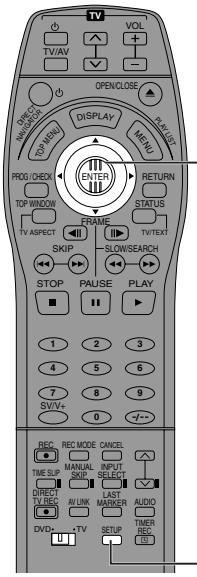
- If you have performed Manual Tuning to enter TV stations, the [– –] indication may appear under [Pos/Name] on the On Screen Display when programming a Video Plus+ timer recording.

4



5





Auto-Setup Restart, Download, Shipping Condition

You can use the SET UP menus to start Auto Channel setting if Auto Setup (page 14) fails for some reason.

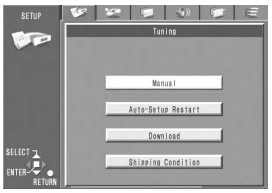
Preparation

Switch [DVD, TV] to "DVD".

1 Press [SET UP].
- The SET UP screen appears.

2 Use the joystick [◄, ►] to select "Settings" tab.

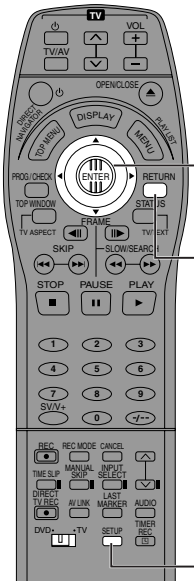
3 Use the joystick [▲, ▼] to select "Tuning" and press [ENTER].



4 Use the joystick [▲, ▼] to select "Auto-Setup Restart", "Download" or "Shipping Condition".

5 Press the [ENTER] prepare for Auto Setup start, Download start or resetting the unit to the shipping condition.
- Press the [ENTER] again to actually start the Auto Setup, start the Download or change the settings back to the shipping condition.
- After returning the unit to the shipping condition, disconnect and reconnect the AC mains lead to re-tune the unit.

6 A message appears asking you to confirm the operation.
- Actual screens depend on the operation. Follow the on-screen instructions.



Re-initialize Setting

The settings for "Picture", "Sound", and "Display" return to the factory settings.

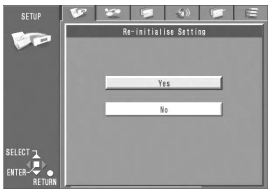
Preparation

Switch [DVD, TV] to "DVD".

1 Press [SET UP].
- The SET UP screen appears.

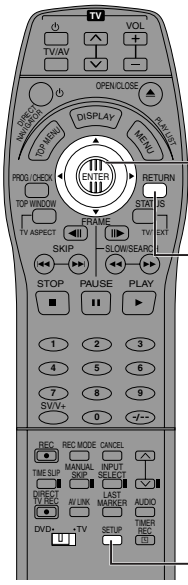
2 Use the joystick [◄, ►] to select "Settings" tab.

3 Use the joystick [▲, ▼] to select "Re-initialize Setting" and press [ENTER].



4 Use the joystick [▲, ▼] to select "Yes" and press [ENTER]

5 Press [RETURN].



Changing the Owner ID (For the United Kingdom)

You can change the [PIN number], [Name], [House No.] and [Postcode].

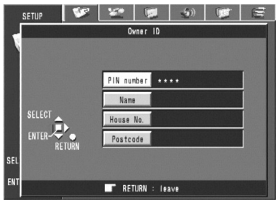
Preparation

Switch [DVD, TV] to "DVD".

1 Press [SET UP].
- The SET UP screen appears.

2 Use the joystick [◄, ►] to select "Settings" tab.

3 Use the joystick [▲, ▼] to select "Owner ID" and press [ENTER].



4 Use the Numeric buttons or joystick (▲▼) to enter the current [PIN number].
- After entering the correct [PIN number], you can change the [Name], [House No.] and [Postcode].

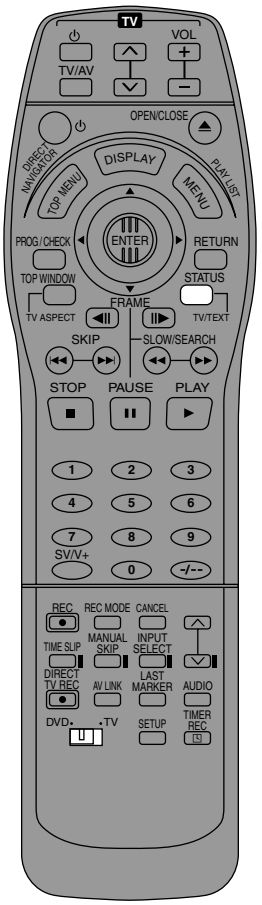
5 Press [ENTER] to conclude the setting.

6 Use the joystick (▲▼◄►), the Numeric buttons and [ENTER] to select and change the desired information.

7 Press [RETURN] to exit the Owner ID setting menu.

■To Display the Owner ID setting menu

Hold down [❚❚, PAUSE] on the main unit for more than 5 seconds.
- The PIN number is not displayed.
- After 30 seconds, this menu automatically disappears.



Changing the information displayed

Displays appear on the television when you operate the unit to let you know what operation was performed and what condition the unit is in.

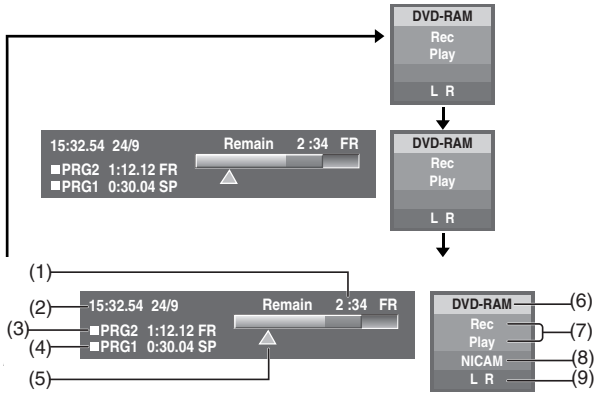
Remote control only

Preparation

- Switch [DVD, TV] to “DVD”.

Press [STATUS] to change the information displayed.

The display changes each time you press the button.
For example, DVD-RAM



(1) Available recording time and recording mode
(2) The current date and time
(3) Recording time

- Shows recording time, recording mode and a rough guide to how much space has been used for recording on the disc.

(4) Elapsed play time
(5) Play position
(6) Current media
(7) Current recording or play status, input channel

- Shows the current state of the unit, and the input channel.

REC: Recording
PAUSE: Recording paused
PLAY: Playing
❚❚: Playing Paused
▶▶: Fast forwarding (5 speeds)
◀◀: Rewinding (5 speeds)
❙▶: Slow-motion (5 speeds)
◀❙: Reverse slow-motion (5 speeds)

(8) Audio type
Automatic indication of the type of sound system which the programme being watched (NICAM/MONO) is broadcast.

(9) Sound mode
LR, R, L: when you have changed the audio with the remote control’s [AUDIO]

For your reference

- These displays may not be shown if “On-Screen Messages” in the “Display” menu is set to “Off” (page 77). If set to “Automatic”, displays **(6)**, **(7)**, **(8)** and **(9)** appear for 5 seconds and then disappear.

Maintenance and Handling

Maintenance

To clean this unit, wipe with a soft, dry cloth.

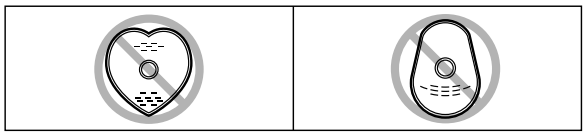
- Never use alcohol, paint thinner or benzine to clean this unit.
- Before using chemically treated cloth, read the instructions that came with the cloth carefully.

Dust and dirt may adhere to the unit's lenses over time, possibly making it impossible to record or play discs.
Use the recommended **DVD-RAM/PD lens cleaner (LF-K123LCA1)** every 1 to 4 months, depending on frequency of use and the operating environment.
Read the lens cleaner's instructions carefully before use.

The precision parts in this unit are readily affected by the environment, especially temperature, humidity, and dust.
Observe the following points to ensure continued listening and viewing pleasure.

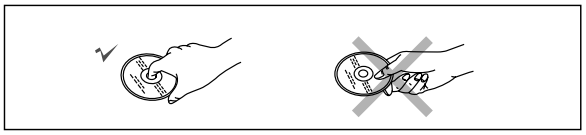
Disc handling

Do not use irregularly shaped discs, such as heart-shaped.
(These can damage the unit.)



■How to hold a disc

Do not touch the recorded surface.



■If there is dirt or condensation on the disc

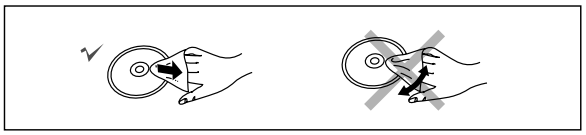
If the disc is dirty, wipe with a damp cloth and then wipe dry.
Moisture may condense on discs after they are brought inside from the cold.

DVD-RAM and DVD-R

- Clean and dry only with the DVD-RAM/PD disc cleaner available as an optional accessory, part number **LF-K200DCA1**. Do not use cleaners or clothes for CDs to clean DVD-RAM and DVD-R.
- Never use cloths or cleaners for CDs, etc.

DVD-Video, Video CD and CD

Wipe it with a damp cloth and then wipe dry.



■Handling precautions

- Do not write on the label side with a ball-point pen or other writing instrument.
- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- Do not attach labels or stickers to discs. (Do not use discs with exposed adhesive from tape or left over peeled-off stickers.)
- Do not use scratch-proof protectors or covers.
- Do not use discs printed with label printers available on the market.
- Do not use discs that are badly warped or cracked.

■Do not place or store discs in the following places

- Locations exposed to direct sunlight
- Humid or dusty locations
- Locations directly exposed to a heat vent or heating appliance.

Glossary

Bitstream

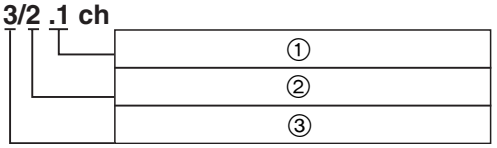
This is the compressed form of digital signals. A decoder decodes these signals into 5.1 surround and multi-channel signals.

Channel (when referring to DVD)

Sound is divided into channels based on the sound's role.
For example, 5.1 channel

- Front speakers — 1 left channel and 1 right channel
- Center speaker — 1 channel
- Surround speakers — 1 left channel and 1 right channel
- Subwoofer — 1 channel × 0.1 (the ratio of bass to the total amount of sound output)

Examples as shown in the on-screen menus



(1) 1: Subwoofer signal
(not displayed if there is no subwoofer signal)
(2) 0: No surround
1: Mono surround
2: Stereo surround (left/right)
(3) 1: Center
2: Front left+Front right
3: Front left+Front right+Center

Direct navigator

This is a list of programmes you have recorded. You can select programmes from the list to view. The list also shows the date and time of recording, the channel, and the titles of titled programmes. The selected programme is played in the background, making selection even simpler.

Dolby Digital

This is a method of coding digital signals developed by Dolby Laboratories. Apart from stereo (2 channel) audio, these signals can also be 5.1-channel audio. A large amount of audio information can be recorded on one disc using this method.

Dolby Pro Logic

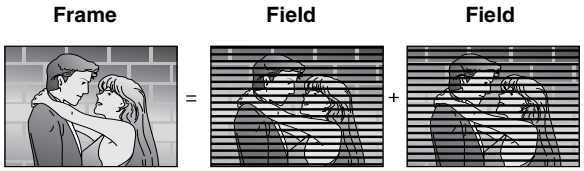
A surround system where a 4-channel audio track is recorded as 2 channels and then is restored to 4 channels for play. The surround channel is monaural.

DTS Digital Surround

This surround system is used in many movie theaters around the world. The separation between channels is good and the compression ratio is low, so realistic sound effects are possible. DTS soundtracks are produced with the assumption that all channels will be used.

Finalize
This process allows DVD-R to be played on compatible equipment.

Frame and field
Frames are the still pictures that go together to make a moving picture. A frame is made up of two fields.



- A frame still is made up of two alternating fields, so the picture may appear blurred, but overall quality is high.
- A field still is not blurred, but it has only half the information of a frame still so picture quality is lower.

Linear PCM
This is a form of signal that has been digitized without compressing it. CDs are recorded with 44.1 kHz/16 bit PCM, while DVDs use PCM between 48 kHz/16 bit and 96 kHz/24 bit, allowing reproduction of greater quality sound.
The linear PCM signals output from the DIGITAL AUDIO OUT, OPTICAL terminal are stereo (2 channel).

NICAM (NICAM Broadcasting System)
This is a 2 channel sound broadcast system which in most instances provides high quality stereo sound. Broadcasters can also transmit two separate mono soundtracks on this system.

Pan&Scan/Letterbox
In general, DVD-Video are produced with the intention that they be viewed on a widescreen television with an aspect ratio of 16:9. This means you can view most material with the intended aspect ratio on a widescreen television.
Material with this ratio will not fit onto a standard television with an aspect ratio of 4:3. Two styles of picture, “Pan&Scan” and “Letterbox”, deal with this problem.
Pan&Scan: The sides are cut off so the picture fills the screen.

Letterbox: Black bands appear at the top and bottom of the picture so the picture itself appears in an aspect ratio of 16:9.

Playback control (PBC)
This is a method of playing video CDs. You can select parts to play by using menus recorded on the disc.

Play list
This is a collection of scenes. It enables you to play these scenes in succession or to select specific ones to play.

Programme (PRG)
The section between the point where recording is started and the point where it is stopped.

Sampling frequency
This is the number of samples of sound taken per second during conversion to a digital signal. A high sampling frequency results in a sound close to the original when played back.

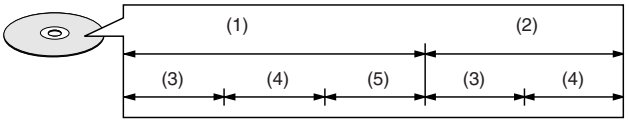
S-video output
The colour and luminance signals are separated before being sent to the television, making for greater picture clarity.

Q Link Function (For the United Kingdom)
When the unit is connected via fully wired 21-pin Scart lead to the TV, Q Link allows.
Download from the TVCopies the tuning set-up from your TV to your unit.
Direct TV recording:
Immediately records the same programme that you are watching on the TV.
TV/DVD Auto switch On:
whilst in standby mode pressing [►, PLAY], [SV/V+] or [PROG/CHECK] will turn the TV and unit on.
Auto Switch Off:
When the TV is turned off, the unit will be turned off as well. This function works in the stop mode.

PDC (For the United Kingdom)
Programme Delivery Control adjusts the start and stop time of a timer recording automatically to ensure the recording starts and finishes in line with the programme broadcast. This is useful when a programme over-runs the published times.
The station must be transmitting PDC and the exact time must be set for PDC to work.
The unit detects whether a station is transmitting PDC only during the tuning process.
If PDC is introduced or discontinued by a station you will need to re-tune the unit before it becomes aware of this.
PDC transmissions are not currently nation-wide so please check with your local broadcaster for more information.
The beginnings of recordings may not be recorded correctly in some cases.

Title/Chapter (DVD-Video)
DVD-Video are divided up into large sections, titles, and smaller sections, chapters. The numbers allocated to these sections are called title numbers and chapter numbers.

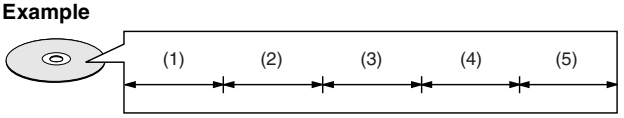
Example



(1) Title 1
(2) Title 2
(3) Chapter 1
(4) Chapter 2
(5) Chapter 3

Track
This is the smallest division on CD, and Video CD, and usually equates to a single song.

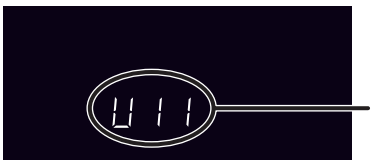
Example



(1) Track 1
(2) Track 2
(3) Track 3
(4) Track 4
(5) Track 5

Self-diagnosis

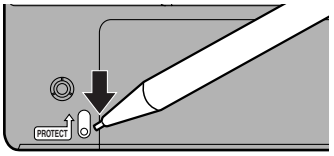
The self-diagnosis displays appear if a problem occurs with the unit.
The service numbers in the table appear when a problem occurs.
- The service numbers are a “U” followed by two digits.



Service number

Service number	Unit status	Solutions
U11	The disc is dirty or badly scratched.	● Follow the instructions in “Maintenance and Handling” to clean the disc if it is dirty. (page 87) ● The disc cannot be played if it is scratched and this display doesn’t disappear.
	You have inserted a disc the unit cannot play or record on.	● Insert a disc the unit can play or record on. (page 8)
U14	The unit is hot.	● The unit switches to standby automatically for safety reasons and you cannot operate it. Wait for about 30 minutes for the service number to disappear. ● Select a position with good ventilation when installing the unit. ● Do not block the cooling fan on the rear of the unit.
U99	The unit fails to operate properly.	● Press [⏻] to switch the unit to standby. Now press [⏻] again to turn the unit on.
REMOTE DVD	The remote control code is wrong.	● Change to the correct code. (page 80)

Error displays

Error messages	Causes and solutions
No Disc.	● You haven't inserted a disc. Correctly inserted a disc that this unit can play. (page 17) ● The disc is upside down. If it is a single-sided disc, insert it so the label is facing up. (page 17)
This is non-recordable disc.	● The unit cannot record on the disc you inserted. The unit cannot record onto finalized DVD-R, DVD-Video, CDs, or video CDs. Insert a DVD-RAM or unfinalized DVD-R. (page 9) ● You inserted an unformatted DVD-RAM. Format the disc with this unit. (page 44)
This disc is not properly formatted. Formatting is necessary using DISC INFORMATION.	● You Inserted an incompatible disc. Insert a compatible disc. (page 8)
Please check write protect tab on the disc.	● The write protect tab on the cartridge is set to "PROTECT". Use a ballpoint pen or similar to release the write protection. 
Contents of this disc are protected.	● The programme is write-protected. Release the protection with the direct navigator. (page 52) ● The disc is write-protected. Release the protection with the disc protection sub menu of DISC INFORMATION. (page 43)
Cannot finish recording completely.	● The programme was copy-protected. ● The disc is full. ● Recording was not completed for some other reason.
Cannot record on the disc.	● The disc is scratched. Use another disc. ● The disc is dirty. Clean the disc as described in these operating instructions. (page 87)
Please set clock.	● The clock is not set correctly. Reset the clock using "Manual Clock Setting". (page 81)
This disc may not be played in your region.	● You tried to play a disc with a region number different from this unit's region number. This unit can play only play discs with the region numbers compatible with this unit. (page 8)
Your selection exceeds the recorder's rating limit.	● A ratings level has been set for DVD-Video with this unit. Temporarily unlock the unit with "Ratings" in the disc menu. (page 78)

Troubleshooting guide

Before requesting service, make the below checks. If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, consult your dealer for instructions.

Power

No power	● Insert the mains lead securely into the household mains socket.
The unit is on but cannot be operated.	● The unit is hot ("U14" appears on the display). Wait for "U14" to disappear. ● One of the unit's safety devices may have activated. Reset the unit as follows: 1.Press [⏻/I] on the main unit to switch the unit to standby. If the unit doesn't switch to standby, press and hold [⏻] for about 10 seconds. The unit is forcibly switched to standby. Alternatively, disconnect the mains lead, wait one minute, then reconnect it. 2.Press [⏻/I] to turn the unit on.
The unit switches to standby automatically.	● This is a power saving feature. You can turn it off if you would prefer (Settings—Off Timer—Off). (page 75) Press [⏻/I] to turn the unit on. ● One of the unit's safety devices may have activated. Press [⏻/I] to turn the unit on.

Picture

No picture.	● Make sure the television's input setting (e.g., AV1) is correct.
Television reception worsens after connecting the unit.	● This can occur because the signals are being divided between the unit and the television. It can be solved by using a signal booster, available from audio-visual suppliers. Consult your dealer if reception does not improve.
Screen size is wrong.	● Check the settings on your television. ● Check the settings for "TV Aspect", "4:3 TV Settings for DVD-Video" or "4:3 TV Settings for DVD-RAM" in the Connection menu. (pages 16 and 77)
On-screen messages do not appear.	● Go to Display in the SET UP menus and select "Automatic" for "On-Screen Messages".(page 77) Press [STATUS] to show the on-screen messages constantly.
The grey background does not appear.	● Go to Display in the SET UP menus and select "On" for "Grey Background". (page 77)

Sound

No sound. **Low volume.** **Distorted sound.**	● Check the connections. (pages 11 and 12) ● Check the input mode on the amplifier if you have connected one. ● Turn V.S.S. off if it causes distortion. (page 67)
Cannot hear the desired audio type.	● Press [AUDIO] on the remote control to select the desired audio type. (page 22) DVD-R ● Go to Sound in the SET UP menus and choose the correct setting with "Billuingual Selection for DVD-R". (page 76)
Cannot switch audio during stereo or NICAM broadcasts.	● You have used digital connection. Connect to other equipment using audio cables (analogue connection). (pages 11, 12 and 71) ● You cannot change the audio type when using DVD-R.

Displays

The display is dim.	● Go to Display in the SET UP menus and change the display's brightness with "FL Display". (page 77)
"0:00" is flashing on the unit's display.	● The clock is not set. Go to Settings in the SET UP menus and set the clock with "Clock". (page 81)

Play

Play fails to start even when [►, PLAY] is pressed. **Play starts but then stops immediately.** **"U11", "NO DISC", or "Cannot Play" appears on the unit's display.**	● Insert the disc correctly with the label facing up. (page 17) ● This unit cannot play discs other than DVD-RAM, DVD-R, DVD-Video, Video CD, and CD. (page 8) ● The disc is dirty. Clean it. (page 87) ● The disc may be badly scratched. (page 87) ● You inserted a blank DVD-RAM or DVD-R.
No response when buttons pressed.	● Some operations may be prohibited by the disc. ● If the unit is not operating at all, press [⏲, TIMER REC] to switch the unit to standby, then press [⏲, TIMER REC] again to turn the unit on. The unit may not be operating correctly due to lightning, static electricity, or some other external factor. ● The Child Lock function is activated. (page 70)
A title or chapter doesn't play when it is selected.	● Some titles and chapters on DVD-Video are not played when you have changed the ratings level. (page 78)
Picture distorted during search.	● Some distortion is normal.
There is ghosting.	● Change the settings for "3D-NR", "Block NR", and "Mosquito NR" to "0", or turn "MPEG-DNR"-off with the on-screen menu icons. (page 66)
Alternative soundtrack and subtitles cannot be selected.	● The languages are not recorded on the disc. ● You may have to use the disc's menus to select languages.
Soundtrack/subtitle language not the one selected with the SET UP menus.	● The language is not recorded on the disc. (page 75)
No subtitles.	● Subtitles are not recorded on the disc. ● Turn the subtitles on. (page 65)
Angle cannot be changed.	● This function depends on software availability. Angles can only be changed during scenes where different angles are recorded ("📷" appears on the display).
You have forgotten your ratings password.	● Restore the ratings setting to the factory settings. While the disc tray is open, press and hold [⏮] and [⏭] at the same time for 5 or more seconds.

Remote control

The remote control doesn't work.	● The unit is on standby to make a timer recording ("⏲" on the unit's display is on). (page 32) ● [DVD, TV] is not switched to "DVD". Switch to "DVD" when operating this unit. (page 6) ● The remote control code is wrong. Change to the correct code. (page 80) ● The batteries are depleted. Replace them with new ones. (page 6) ● Point the remote control at the remote control sensor on the main unit. (page 6) ● Remove obstacles from between the remote control and main unit.
Cannot operate the television.	● The remote control code is wrong. Change to the correct code. Some televisions cannot be operated even if you change the code. (page 10) ● [DVD/TV] is not switched to "TV". Switch to "TV" when operating the television. (page 6)

Recording and timer recording

Cannot record.	● You haven't inserted a disc or the disc you inserted cannot be recorded on. Insert a disc the unit can record onto. (page 8) ● The disc is unformatted. Format the disc so this unit can record on it. (page 44) ● The write protect tab on the cartridge is set to "PROTECT". Use a ballpoint pen or similar to release the write protection. (page 90) ● The disc is full or nearly full. Delete unneeded programmes or use another disc. (page 48) ● The material you are trying to record is copy-guarded.
Video Plus+ programming does not work properly.	● The guide channels are incorrect. Go to Settings in the SET UP menus and correct the guide channels with Video Plus+ Setting. (page 15) ● The clock is wrong. Go to Settings in the SET UP menus and correct the clock with "Clock". (page 81)
Timer recording does not work properly.	● The timer programme is incorrect. Make corrections to the programme and check them when you are finished. (pages 33 and 36) ● The unit is not on standby for timer recording. ("◷" on the unit's display is not on.) ● Different timer programme times overlap. (page 32) ● The clock is wrong. Go to Settings in the SET UP menus and correct the clock with "Clock". (page 81)
The unit switches to standby while making a timer recording.	● The unit switches to standby while making a timer recording if the disc runs out of space. Use a disc that has enough space to record the programme.
The timer programme remains even after recording finishes.	● The programme remains if you select weekly or daily setting. (pages 33 and 35)
The available recording time doesn't increase even after erasing all recordings on the disc.	● The available recording time does not increase if you erase data written to the disc with the DVD-RAM drive of a computer. Format the disc if necessary. (page 44)

Discs make sounds as they rotate. This does not indicate a malfunction.

Specifications

Power supply: AC 220-240 V, 50 Hz
Power consumption: 40 W
Recording system: DVD video recording standards (DVD-RAM),
DVD video standards (DVD-R)
Recordable discs: 12 cm 4.7 GB DVD-RAM
12 cm 9.4 GB DVD-RAM
8 cm 2.8 GB DVD-RAM
12 cm 4.7 GB DVD-R (for General Ver.2.0)
Recording time: Maximum 360 min (with 4.7 GB disc)
XP:Approx. 60 min SP:Approx. 120 min
LP:Approx. 240 min EP:Approx. 360 min
Playable discs: 12 cm 4.7 GB DVD-RAM
12 cm 9.4 GB DVD-RAM
8 cm 2.8 GB DVD-RAM
12 cm 4.7 GB DVD-R (for General Ver.2.0)
DVD-Video
CD-Audio (CD-DA)
Video CD
CD-R/RW (CD-DA, Video CD formatted discs)

Audio

Recording system: Dolby Digital, 2 ch
Audio In: AV1/AV2 (21 pin) AV3/AV4 (pin jack)
Input Level: Standard : 0.5 Vrms
Full scale: 2 Vrms at 1 kHz
Input Impedance: more than 10 kohm
Audio Out: AV1/AV2 (21 pin) Audio Out (pin jack)
Output Level: Standard : 0.5 Vrms
Full scale: 2 Vrms at 1 kHz
Output Impedance: less than 1 kohm
Digital Audio Out: Optical terminal
(PCM, Dolby Digital, DTS, MPEG)

Television System

Tuner System: PAL I 75 ohm
Channel Coverage: **For the United Kingdom**
UHF : CH 21-68
For Hong Kong Special Administrative Region of China
UHF : CH 21-69
RF Converter Output: Not provided

Video

Video System: PAL colour signal, 625 lines, 50 fields
NTSC colour signal, 525 lines, 60 fields
Recording system: MPEG2 (Hybrid VBR)
Video In: AV1/AV2 (21 pin), AV3/AV4 (pin jack)
1 Vp-p 75 ohm, terminated
S-Video In: AV2 (21 pin), AV3/AV4 (S terminal)
1 Vp-p 75 ohm, terminated
Video Out: AV1/AV2 (21 pin), Video Out (pin jack)
1 Vp-p 75 ohm, terminated
S-Video Out: AV1 (21 pin), S-Video Out (S terminal)
1 Vp-p 75 ohm, terminated
RGB Out: AV1 (21 pin) 0.7 Vp-p (PAL)
75 ohm, terminated

DV-Input: i.LINK/IEEE1394 Standard, 4-pin
Dimensions(W)x(H)x(D): Approx. 430x120x351 mm
Weight: Approx. 5.6 Kg
Operating Temperature: 5 °C – 40 °C
Operating Humidity range: 10% – 80% RH (no condensation)

LASER Specification
Class 1 LASER Product
Wave Length: 775-815 nm, 655-666 nm
Laser Power: No hazardous radiation is emitted with the safety protection

Note
Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Index

■A
A-B repeat play 67
Audio 22, 66
Auto Setup 13, 85

■C
Child lock 70
Clock 81
Connecting 11, 12, 71, 77
CREATE PLAY LIST 56

■D
DIRECT NAVIGATOR 46
Direct TV Recording 27
Disc 8, 17, 25, 87
DISC INFORMATION 41, 65
Dolby Digital 9, 70, 78, 87
Download 13, 85
DTS 9, 70, 78, 87
DV AUTO REC 69

■E
EXT LINK 27

■F
Finalize 45, 88
Flexible recording mode 33, 36
Follow-on play 28
Format 44
Frame-by-frame 19

■M
Manual tuning 83
Marker 68
MENU 18
MPEG 66, 78

■O
Off timer 79
Owner ID 13, 85

■P
PDC 34, 88
PLAY 17
PLAY LIST 55, 88
PROGRAMME PLAY 23

■Q
Q Link 13, 88

■R
RANDOM PLAY 24
Ratings 75, 78
Recording 25, 38
Recording modes 26
Repeat play 67
RESUME PLAY 18

■S
Search 19
SET UP 74
ShowView 32
Simultaneous recording and play 28
Slow-motion 19
Subtitle 65, 75

■T
Time Slip 21, 29
Timer recording 32, 35
Title 40, 41, 49, 63, 88
Top window 30

■V
V.S.S. 67
Video Plus+ 32

■W
Watching the television while recording 29
Write protect tab 90